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WEATHER WORDS OF POLYNESIA

BY

WILLIAM CHURCHILL

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WEATHER WORDS OF POLYNESIA

By WILLIAM CHURCHILL

Introduction

Collected thus topically to serve an end of philological comparison and having in that regard served their purpose it has seemed that the following notes present a picture of wider perspective, unfold a more intensive disclosure of the nicety of observation and the appreciation of delicate shades of distinction which are in the possession of the keen-sighted and mentally alert Polynesian. He is observant of nature in all her moods, his eye is quick to see the events of the conditions of tropic sky and bounteous earth which environ his life. To him these events of nature are important in gross and in detail; in gross, as they present the broad scope of the natural environment through which he has won to such culture as is his; in detail, as their changes enter as factors into the immediate employment of his time and his activity of whatever sort. That the weather, its torrid calms, its torrents of rains, its blasts of hurricanes, its months of steady trade wind, forms a prime and basic condition of his life, its affairs and his conduct of them, this will readily be granted. As a single chapter in the intellectual study of the great race of the Pacific, therefore, these weather notes of Polynesia are here presented in a transcript from various records and with no more in the way of comment based on the writer's own observation and personal experience than may serve to assist the interpretation for those to whom this simple type of speech is unfamiliar.

To the islander, all the more by reason of his very insularism, the sky is everything. To him sea and sky are the greatnesses of the world; his island home is exiguous, an eyeshot from its central eminences reveals its petty verge; over him is the warm

enfolding immensity of the vault of sky, about him the no colder embrace of the adventurous expanse of ocean, once and again adventured to daring goals, as the ancients tell.

Above all else the sky.

The sky is the home from which his race has sprung; in it dwell his gods, Epicurean in their remoteness of inexorable ease; through its concave flash the divine messengers. To his racial home he has lost the path and may now never return, his parting spirit takes its westward way to a nether abode in Pulotu. Yet he never forgets that from the sky he derives his long line of shadowy ancestry. From the uncreated, because uncreatable, existences the forefathers of his race were created in wedlock and in birth; his genealogy begins in the fatherhood and the motherhood of the mighty forces of nature in a world yet plastic. Some of these nature ancestors we shall soon see in the story of the clouds.

His universe at its dawn lighting is naught but sky and sea.

Upon the void and tumult and chaos of waters rests flat and everywhere the cosmos of the sky, order not only its first law but order heaven's very self, fully preëxistent, heaven upon heaven reared. In the highest heaven — the tally varies in the divers culture attainments of the several stems of the race — in the eighth or whatever be the summit heaven repose the four great gods, Tane, Tu, Longo, and Tangaloa. In the simpler theology of the Samoan, at the central point of Polynesian dispersal over the Pacific tract, there is but one god, self-inspired and uncreatable, supreme repose, unruffled calm, Tangaloa the creator and the peopler. He it is who despatches his couriers of the wind, the lightning, and the thunder athwart the seven lower heavens to report upon the void below, and their report is an unvarying tale of the emptiness of that chaos of mighty ocean. It is only when he sends last of all as his messenger the tiny sandpiper Tulī, ever since known of men as Tulī-a-Tangaloa, that he gets the slab of madrepore out of which he whittles the lesser gods. It is for Tulī that he creates land in the whirling waste, the land which is to become Samoa and the home of the Samoans, the first land of all upon the earth.[1]

[1] S. Percy Smith, *Hawaiki: The Whence of the Maori*, p. 17.

The coral chip debris after the minor gods had been carved into being forms the first vestige of Tulī's land, Manu'a Sā, Holy Manu'a, the first of lands.

Fea le nu'u na lua'i tupu?	Where is the land which first arose?
Manu'a tele na mua'i tupu,	Great Manu'a first arose,
Se papa le tai lē a o'o atu.	A rock the sea will not encroach upon.
Ma le masina e solomana'o,	And the moon inconstant,
'O le la se tupua lē fano,	The sun an unchanging image of god,
E tupu le vai, e tupu le tai, e tupu le lagi.[1]	Upgrows the sweet water, upgrows the sea, upgrows the sky.

Before we leave this waste of primeval water let us catch, albeit faintly, the lilt of Samoa's great creation hymn, the Chant of Chaos. With no word of preface thus it sweeps upon the void.

Galu lolo ma galu fātio'o,	Rollers flooding, rollers dashing,
Galu tau ma galu fefatia'i,	Rollers struggling, rollers clashing,
'O le auau peau ma le sologapeau,	The sweep of waters and the extension of waves,
Na ona fa'afua 'a e lē fati.	Surging high but breaking not.
Peau ta'oto, peau ta'alolo,	Waves reclining, waves dispersing,
Peau mālie, peau lagatonu,	Waves agreeable, waves that cross not,
Peau ālili'a, peau la'aia,	Waves frightful, waves leaping over,
Peau fatia, peau taulia,	Waves breaking, waves warring,
Peau tautala, peau lagava'a,	Waves chattering, waves upheaving,
Peau tagatā, peau asifo mai gagae,	Peopled waves, waves from east to west,
'O lona soa le auau tata'a.[2]	Whose companion is the wandering currents.

[1] John Fraser, "Folk-Songs and Myths from Samoa," *Journal of the Polynesian Society*.

[2] A critical examination of several versions of this magnificent Solo o le Va finds place in the author's manuscript *Samoa o le Vavau*. The version here cited is that of Powell and Pratt reported by Fraser, a version that is entitled to the most respectful consideration.

In other stories, which it is not incumbent upon us to attempt to reconcile each with other inasmuch as the people of our study detect no discrepancy in their diversity, we encounter thaumaturge Maui. It is he who lifts the sky from off the earth, it is he who with a noose of the hair of his sister Ina snares the sun and holds him until he promises that nevermore will he blast the earth with fervent heat. He it is who is the founder of new lands, angling in the ocean and catching land upon his hook; in New Zealand the North Island is yet Te Ika a Maui, Maui's Fish, and in Tonga, also a catch of the same god, Maui's hook had only lately (1770) been lost when Caucasian voyagers came upon cruises of initial discovery.

To sea and sky the prophetic vision of the whole Polynesian race had bent expectant gaze, awaiting the coming of their discoverers. It was their faith that out of their ancestral sky great white birds in some future age were to bring them a white god. Bellying sails of canvas first seen cracking the sky at the line where it merges into sea were for them the fulfilment of prophecy. The white bird at last had brought the white god out of the sky to a welcome on the faithful shore. Read the record of the early voyages and see what their welcome was; look at the vanishing Polynesian if one would comprehend the infamy of the cruel requital of that welcome.

We may not magnify, it is impossible to overestimate, the importance of the sky to the islander. From it he came, to it he looked for a new incarnation of divine help; at every dawn he searched its eastward flush for the sign and portent of the coming day, by it he regulated the daily affairs of his life.

In the following notes we shall pass under survey those phenomena of the sky which to the Pacific islander seemed worthy of record by a word in his speech. To lose nothing of pictorial value I have seldom departed from the turn of expression found in the various brief vocabularies of island tongues. In some few cases I have followed a word or a concept outside the proper limits of Polynesia wherever there has seemed a possibility of finding a wider dissemination in the marginal tongues. Credit is to be acknowledged to the several vocabularies of

Polynesian languages with the assistance of which I have confirmed or supplemented my own notes,[1] but as these works may so readily be identified I have not thought it necessary to particularize save in the case of Tregear's *Maori Comparative Dictionary*, to which the indebtedness is overwhelming in my own instance, as it must be to all who seek to prosecute Polynesian research of any sort. The grouping by the standard divisions of meteorological science is merely adopted for convenience in examining the material. It is an excrescence, it corresponds to nothing in Polynesian thought, therefore it does not hold consistently through the discussion of the notes, for while the South Sea folk are the keenest observers of the weather they are in no sense meteorologists.

The Clouds

Airy nothings though they be, sunlit trifles of the lower atmosphere in idle procession across the sky, the clouds have been in Samoan legend substantial enough entities to supply several generations of the earliest ancestors of men below. Glance for a moment at the very fathers of the race of the Malietoas, just fifty generations before the present holder of the title, Malietoa Tanumafili. Here in eternal night we see the beginning of man resting upon the symbol of the immutable.

Na usu Papasosolo ʻia Papanofo, tasi ʻo Papatū.
Rock-gliding wedded Rock-sitting. begat Rock-erect.

Na usu Papatū ʻia Papaʻele, tasi ʻo ʻEleʻele.
Rock-erect wedded Rock-in-earth, begat Glebe.

Na usu ʻo ʻEleʻele ʻia Matagialuga, tasi ʻo Matagitafulu ma Matagifasifanua ma Matagifilēmū ma Saualeola.
Glebe wedded Wind-above, begat High-wind and Boisterous-wind and Wind-smiting-lands and Gentle-wind and Dew-of-life.

[1] We note a paper by Capt. John P. Finley, U. S. A., governor of Zamboanga, on "Meteorological Terms used in the Philippines," *Monthly Weather Review*, June, 1907, p. 272. He lists 27 terms in English, Spanish, Magindano, Sulu, and Malay. These are all marginal.

I regret that I have not been able to collate the weather word studies of Mr A. Shand on the Moriori, *Journal of the Polynesian Society*, vol. VII, p. 88, and on the Rarotongans, idem., vol. VIII, p. 71. They refer particularly to wind names.

Na usu Saualeola ‘ia Aopi‘ilagi, tasi ‘o Aofelelea‘i.	Dew-of-life wedded Cloud-clinging-to-the-sky, begat Flying-cloud.
Na usu Aofelelea‘i ‘ia Lagiatea, tasi ‘o Ata ma Segisegi ma Taeao ma Aoatea ma Aoauli ma Taugagaifo ma Pulalagoto.	Flying-cloud wedded Vault-of-sky, begat Break-of-day, Morning-twilight, Dawn, Foren on, High-noon, Westering-sun and Glory-of-sunset.
Na usu Matagifilēmū ‘ia Aolelei-lenimo, tasi ‘o Lagiaunoa.	Gentle-wind wedded Scud-flying-in-the-void, begat Empty-sky.
Na usu Lagiaunoa ‘ia Mafolaa-lelagi, tasi ‘o Tagaloa-fa‘a-usugafa.	Empty-sky wedded Expanse-of-sky, begat Tangaloa-creator-of-families.[1]

Here we may for the present leave this genealogy, for through these cosmic marriages in heaven we have been brought to the birth of god supreme. It is yet fifteen generations before hero Savea is to find and assume the designation of Malietoa. From the first Malietoa there are yet to be seven-and-twenty generations to that simple man Malietoa Laupepa, too timid for a king, with whose death crumbled the all too dearly upheld kingdom of Samoa. When a race harks back to such a flight of clouds drifting over its earliest origin the clouds in its summer skies challenge the eye as cousins or in some way kin. From these mythological clouds we now proceed to an examination of the notes of the sky clouds as preserved in the speech of Polynesia today.[2]

[1] We shall have occasion to return to this record of the past; it will, therefore, be not amiss to state its source. I had it from the lips of Lauati, the chiefly orator of the Malietoa kin, a sage and a worthy student of the past. It was written down for me by Te‘o Tuvale, the very respectable Secretary of State of the late Samoan government. Best of all this record had the recension of Laupepa and by him it was stamped as official. It will eventually be found in the author's *Samoa o le Vavau* with notes and a coördination of its time record.

[2] It has seemed proper to preserve the spelling adopted in the various languages of the Pacific, even though reduction to a uniform system would have greatly facilitated comparison. Therefore a note is to be made of the principal differences that may be found. In all cases *g* and *ng* are the same sound, that of *ng* in *singer*. The Samoan catch (‘) is treated as though it were the *k* whose absence it denotes. In the Fijian *d* sounds *nd*, *b* sounds *mb*, *c* is the *th*(*dh*) of *that*, *q* is the hard *ng* of *finger*. The vowels have the Italian tone; diphthongs are really more apparent than real; the doubled vowels in Tongan are really long vowels. With these qualifications it will not be difficult to trace out the resemblances.

1	ahiahirumaruma	Tahiti	cloudy night. ahiahi, evening; rumaruma, dark.
2	ahinavai	Tahiti	misty, cf. 445.
3	akapaku	Mangareva	heavy clouds entirely covering the sky. paku, a roof or covering. cf. 4, 190, 230, 254.
4	akapakupaku	Mangareva	passing clouds allowing the sun to be seen now and then.
5	akaragiragi	Mangareva	cloudy, dull, overcast. cf. 147, 226.
6	akere	Mangareva	cloudy weather. kerekere, dark blue almost black.
7	aki	Maori	to drive, to rack.
8	alaneo	Hawaii	clear, serene, unclouded, as the air on the mountains. ala, path; neo, silent.
9	alewalewa	Hawaii	a cloud floating in the atmosphere. lewa, the upper regions of the air where the clouds are; lewalewa, floating. cf. 156.
10	aniwa	Maori	dark, heavy thick clouds, thundercloud. niwa, great; niwaniwa, unlimited. cf. 556, 1046.
11	anuanua	Mangareva	mist, clouds on the horizon. cf. 1067.
12	ao	Samoa	cloud. same in Tonga, Futuna, Uvea, Tahiti, Hawaii, Mangareva, Nukuoro, Maori. cf. 76, 124, 126, 143, 153, 205, 216, 242, 244, 278, 496, 606, 689, 1047, 1166. The senses of ao and aso, day, so inosculate as to present a pretty linguistic tangle, which, however, is easy of resolution on my working hypothesis of the seed of speech and the sense differentiation through the consonantal modulant as coefficient.

		On this basis a refers to the substantial appearance, o supplies the element of shining.
13 aoaoa	Futuna	a cloudy day.
14 aoaofia	Tonga	to be cloudy, overcast.
15 aohau	Maori	a small, solitary cloud blown along by the wind in a clear sky. hau, wind. cf. 246.
16 aohiawe	Maori	dark, obscure day, daybreak with narrow, streaky clouds. hiawe, gloomy.
17 aohoka	Maori	heavy cumulus clouds rising from the sea, betokening a gale. hoka, projecting sharply up.
18 aokahea	Hawaii	name of a cloud. kahea, dirty.
19 aokahiwahiwa	Maori	dark, lurid, much broken clouds. kahiwahiwa, intensely dark.
20 aokairau	Maori	clouds blown wildly in all directions.
21 aokanapakanapa	Maori	lurid copper-colored clouds reflecting changing lights. kanapa, bright, shining.
22 aokapua	Maori	cloud. cf. 35, 63, 110, 115, 121, 122, 184.
23 aokapuarangi	Maori	a broad, spread out cloud. rangi, sky.
24 aokokiri	Maori	narrow cirrus clouds blown along by a high wind. kokiri, to dart or charge forward in a body.
24a aolagi	Niuē	cloud.
25 aoloa	Hawaii	a long cloud. loa, long.
25a aolū	Niuē	vapor, cloud.
26 aomā	Maori	high white clouds. mā, white, pale, clean. cf. 150.
27 aomatarahi	Maori	a thin, spreading cloud. matarahi, large ; compare matalasi, Samoa, of many points.
28 aomatangi	Maori	clouds presaging wind or carried along by the wind. matangi, wind. cf. 761.

29	aomauru	Maori	clouds gently wafted along. mauru, quieted, eased.
30	aomoana	Maori	clouds from the sea. moana, the deep sea.
31	aonga	Rotumā	cloud.
32	aonini	Maori	red colored clouds. nini, to glow.
33	aonuihoolaholaho	Hawaii	1, a broad mass of clouds extending over a great space. 2, a mass of pillar clouds as seen at night.
34	aonunui	Maori	dense clouds. nui, great.
35	aoopua	Hawaii	sharp pointed clouds, pua, an arrow. cf. 22, 63, 110, 115, 121, 122, 184, 215, 216.
36	aoori	Maori	bad weather clouds betokening a gale. ori, bad weather.
37	aooterangi	Maori	1, very high clouds. 2, a single cloud seen in the sky. te rangi, the heavens.
38	aootetonga	Maori	clouds from the south. tonga, south. cf. 56.
39	aopakakina	Maori	sultry clouds, light or heat from the sun striking strongly down. pakakinakina, hot.
40	aopakarea	Maori	thunderstorm clouds.
41	aopakurangi	Maori	small, broken clouds. paku, small; rangi, sky.
42	aopango	Maori	1, clear blue sky. 2, dark, thick clouds. pango, blue, black. The same confusion inheres in the use of uli as between sky blue and storm black; it is not that the color sense is defective, it is that word differentiation has not yet arisen; one recalls the "winecolored sea" of the Homeric rhapsodists. cf. 107, 194.

43	aoparoro	Maori	heavy, dark, threatening clouds of wind and rain, cumulus. cf. 197.
44	aopo'a	Samoa	a large cloud. po'a, large.
45	aopoko	Hawaii	a short cloud. poko, short.
46	aopotango	Maori	gloomy, thick, lowering clouds, nimbus. potangotango, very dark. cf. 170, 172, 350.
47	aopouri	Maori	1, dark, lowering clouds. 2, clear blue sky. po, night; uri, black. cf. 92. See note to 42.
48	aopupururangi	Maori	thick clouds covering the face of the sky, cumulus.
49	aoraki	Maori	clouds coming from the north. raki, north. cf. 57.
50	aorere	Maori	scud. rere, to fly. aolele, Samoa, idem.
51	aorewa	Maori	light, thin flying clouds; slender fleecy cirrus; mist. aorereva, Tahiti, idem. rewa, to float, to be elevated. cf. 102, 114, 120, 156, 214, 223.
52	aotakaawe	Maori	swiftly flying clouds. taka, to turn around; aweawe, to float in air.
53	aotapairu	Maori	the highest clouds. Compare tapairu, Mangaia, the celestial fairies.
54	aoteamua	Maori	the first white cloud. tea, white; mua, first.
55	aotootoo	Maori	large massy clouds, heavy cumulus, slowly moving as if dragged along.
56	aotonga	Maori	clouds from the south. cf. 38.
57	aotuaraki	Maori	clouds from the north. tuaraki, the north wind. cf. 49.
58	aotuhirangi	Maori	narrow streaky broken clouds, long cirrus. cf. 142. tuhi, to stripe; rangi, the sky.

59	aoturu	Maori	a passing cloud. turu, to last a short time.
60	aotutuhanga	Maori	an isolated clearly defined cloud. tu, to stand; tahanga, naked.
61	aouru.	Maori	clouds from the west. uru, west. cf. 61, 534, 560, 585, 586, 591, 644, 677, 769, 840, 883, 891a, 936, 940–3.
62	aowera	Maori	hot, sultry, burning sky. wera, heat. cf. 557, 1032, 1041, 1042.
63	aowhakakapuarangi	Maori	sky covered with clouds. whakakapua, misty. cf. 22, 35, 110, 115, 121, 122, 184.
64	aowhekere	Maori	very dark scowling thunder clouds. whekere, very dark.
65	aowhetuma	Maori	very dark storm clouds. cf. 89.
66	aparai	Tahiti	clear, without clouds. rai, the sky.
67	aru	Tahiti	mist.
68	asuasu	Samoa	haze, mist. cf. 84, 428, 495.
69	ata	Tahiti	cloud. ata, Tonga, air. cf. 279.
70	ataiai	Mangareva	clouds red with the sunset.
71	atavai	Tahiti	a cloud.
72	atea	Maori	to be unclouded.
73	atiru	Maori	straggling clouds, a sign of wind and rain. synonyms 222, 246.
74	au	Mangareva	sea clouds. au, Maori, cloud, scud, mist, fog; not common. cf. 583.
75	aukoronoa	Mangareva	cloudy weather threatening rain. cf. 140, 227.
76	awan	Malay	cloud. cf. 12.
77	bakút	King and Lamassa (New Ireland)	cloud.
78	bákut	Lambell (New Ireland)	cloud. cf. 121.
79	balabu	'Tonga	mist, misty.
80	bewabewa	Viti	scud containing rain.
81	de ni cagi	Viti	scud in motion. de, sirreverence; ni, of; cagi, the wind.
82	ea	Hawaii	to rise into sight.

83	Fa'amalu	Samoa	a god seen in the clouds; if the clouds preceded a war party it was an omen of victory. malu, shade, protection. cf. 106, 166, 183, 252.
84	fakaahuahu	Tonga	dark dense clouds on the horizon. cf. 68, 428, 495.
85	fakafalefaletimu	Futuna	sky covered with clouds without rain. faka, causative; fale, house; timu, rain, cf. 474.
86	fakalouloua	Tonga	to be overcast.
87	fegaholoaki	Tonga	to fly in different directions. reciprocal of gaholo, to move.
87a	hahau	Niuē	mist, fog.
88	hakuhana	Hawaii	a word applied to the appearance or motion of the clouds.
89	hakuma	Hawaii	a thick cloud, one threatening a storm. kuma, dark colored. cf. 65.
90	hakumakuma	Hawaii	lowering, threatening.
91	Haumaringiringi	Maori	the gods of the mists. cf. 15, 246.
92	hauli	Hawaii	dark clouds, the deep blue sky. uli, black, blue. cf. 47.
93	hohola	Hawaii	to spread over.
94	hokaia	Maori	the stratified appearance of clouds. hokai, to be stretched out.
94a	hokohokolagi	Niuē	pillars of cloud denoting wind and rain.
95	hooeleele	Hawaii	to blacken, as clouds before a storm. eleele, black, blue, dark red, brown. cf. 6, 64.
96	hoohaha	Hawaii	overshadowed by clouds.
97	hookaukau	Hawaii	the gathering of clouds before a rain. kau, to overhang.
98	hookakaa	Hawaii	the dark involving of clouds before a storm. kaa, a wheel. cf. 51, 52, 102, 114, 120, 156, 214, 223.

99	hookalae	Hawaii	to clear off, as clouds after rain. kalae, clear sky. cf. 101, 719a, 1184, 1188.
100	hookokohi	Hawaii	black and threatening, lowering. cf. 137.
101	hoolaelae	Hawaii	an unclouded sky. cf. 99, 719a, 1184, 1188.
102	hoolewalewa	Hawaii	clouds flying low. cf. 51, 114, 120, 156, 214, 223.
103	hooluluhi	Hawaii	gathering clouds before a storm. cf. 109, 159, 219.
104	hoomakomako	Hawaii	an epithet of a cloud, of uncertain sense.
105	hoomalie	Hawaii	to clear off after a storm. malie, to be calm. cf. 747.
106	hoomalumalu	Hawaii	low lying. malu, to shade, to protect. cf. 83, 166, 183, 252.
107	hoopanopano	Hawaii	thick and black. pano, black, deep blue. cf. 42, 194.
108	hoopehupehu	Hawaii	spreading. pehu, to increase in size.
109	hoopoluluhi	Hawaii	to thicken and darken before a storm. cf. 103, 212, 219.
110	hoopuakea	Hawaii	a beautiful white cloud. cf. 22, 35, 63, 115, 121, 122, 184.
111	hoopuwapuwa	Hawaii	to hang suspended, as clouds in the air. cf. 225.
112	hoowiliwili	Hawaii	to move as clouds with contrary winds. wiliwili, to stir around. cf. 732, 959.
113	ieawe	Nengone	cloud. iengo, wind; awe, heavens.
114	kaalelewa	Hawaii	clouds driven swiftly by the wind. kaa, to roll, cf. 52; lewa, to swing, cf. 51, 102, 120, 156, 214, 223.
115	kabu	Viti	fog, mist. kabukabu, Viti, clouds hanging about a mountain. kabu, Tonga, mist, fog.

			kakabu, Tonga, cloudy, misty, hazy. cf. 22, 63, 110, 121, 122, 184.
116	kahaea	Hawaii	to spread over the heavens in variegated shades; a singular appearance of the sky in the morning, a sign of rain.
117	kaiaulu	Hawaii	an overhanging cloud.
118	kaiwaka	Maori	a line of clouds on the horizon at evening. wakawaka, parallel ridges. cf. 187.
119	kakai	Hawaii	a cloud that hangs low near the ground. synonym 193.
120	kalewa	Hawaii	floating clouds. cf. 51, 102, 114, 156, 214, 223.
121	kapua	Maori	a cloud, a bank of clouds.
	opua	Hawaii	narrow pointed clouds.
	kakabu	Tonga	foggy, misty.
	kābu	Viti	foggy, misty.
	kabut	Malay	fog.
			cf. 22, 35, 63, 78, 110, 115, 122, 184.
122	kapukapu	Tonga	to be overcast, cloud over sun or moon.
123	kaupua	Hawaii	an elevated cloud of singular appearance.
124	kekeao	Maori	overcast sky. cf. 12.
125	kekefu	Futuna	dark, cloudy, threatening. cf. 163.
126	kiaao	Hawaii	a pillar of cloud. kia, pillar. cf. 12.
127	kiaweula	Hawaii	red clouds. ula, red. cf. 289, 404.
128	kihikihi	Mangareva	clear, serene, cloudless.
129	kiikau	Hawaii	clouds divided into strips black and white.
130	kiowao	Hawaii	the name of the mist or cloud almost always settled on the hills of Oahu. vao, cf. 339, 485, 517.

131 kivakiva — Futuna — a day of cloudless sky and intensely hot sun.

132 koera — Maori — broken clouds. koera, to be broken.

133 kofukofu le lagi — Futuna — cloudy day, sky overcast.

134 kohu — Maori — fog, mist.
kohu — Tonga — smoke.
kohu — Marquesas — mist, clouds on the mountains.
kohu — Paumotu — fog, mist on land.
kokofu — Futuna — fog, mist.
kou — Rarotonga — mist, fog.
kou — Mangareva — clouds low on the peaks of the hills.
ohu — Tahiti — a cloud settled on top of the mountains.
ohu — Hawaii — fog, mist, cloud. cf. 214, 217, 238, 247, 367.

135 koipuipu — Maori — overcast. cf. 365.

136 koiula — Hawaii — a cloud floating upward.

137 kokohi — Hawaii — the storm cloud. cf. 100.

138 kongu — Maori — cloudy, misty, drizzling.

139 körô — Marshalls — cloud.

The following are given without further definition in Father Erdland's dictionary as kinds of clouds, belēj, jin aroñ, wudak, kimej, līarkal, kädalge, äjēj, dôrdôr, tür in jebue, nebir, lörōwut, lejböudo, labüo, larōruij, lekürbar, majkarel; jin alliñ, clouds before moonrise; buine rān, clouds in the gray dawn.

140 korouri — Mangareva — cloudy, overcast weather. uri, black, blue. cf. 227.

141 koruki — Maori — cloudy, overcast. Also in the same sense the variants koru-kuruku, koruru.

142 kotuhi — Maori — an arch formed by clouds on the horizon. tuhi, to stripe. cf. 58.

143 kuao — Hawaii — a cloud standing in an upright position. ku, to stand. cf. 12.

144 kuontrē — New Caledonia — cloud.

145 kupe — Moriori — a cloud. cf. 718.

146	kurra	Ebon	cloud.
147	lagilagiā	Samoa	cloudy by day, threatening rain. cf. 5, 226, 278.
148	lagi'ulo	Samoa	a dark sky.
149	lagilelei	Samoa	clear sky. lelei, good.
150	lagimā	Samoa	bright heavens. lagimaa, Tonga, a clear sky. mā, shining. cf. 26.
151	lagiuli	Tonga	a cloudy sky.
152	lagivalea	Samoa	cloudy by night. cf. 262.
153	laloaoa	Samoa	under a cloud; to be gathering as clouds under the sun, thence spreading over the heavens. lalo, under. cf. 12.
154	lanipili	Hawaii	the clouds as they appear to touch the horizon. pili, to touch, to adhere to.
155	lei	Hawaii	to rise up, as a cloud.
156	lewa	Hawaii	to float in the air. cf. 9, 51, 102, 114, 120, 214, 223.
157	likutausere	Viti	clouds hanging about a mountain. liku, a woman's loin cloth; tausere, loosened, undone.
158	loa	Viti	a black cloud.
	loa	Tonga	darkness preceding a squall. cf. 256, 261, 484.
159	luluhi	Hawaii	to hang black and heavy. cf. 103, 109, 219.
160	mahanihani	Tonga	cloudless.
	masagisagi	Futuna	clear sky.
161	mahu	Tahiti	cloud, mist.
162	mairefatutu	Tahiti	clouds on the horizon.
163	makefu	Futuna	dark and cloudy, presaging a spell of bad weather. cf. 125.
164	malehaleha	Hawaii	the appearance of the sky at evening.
165	malehulehu	Hawaii	the appearance of the sky at dawn.
166	malumalu	Samoa	overcast, cloudy.
	malumalu	Tonga	cloudy.

	malumalu	Niuē	a lowering sky.
	malumalu	Hawaii	shady, cool. cf. 83, 106, 183, 252.
167	maomao	Hawaii	bluish green in color.
168	mapagă'hes	Saipan	cloud.
169	măsu'e	Samoa	to break up and pass away.
170	mataatao	Tahiti	black clouds. cf. 46, 172.
171	matafi	Samoa	to be swept or blown away.
	matafi	Futuna	to clear up. tafi, to sweep.
172	mataotao	Tahiti	black clouds rising on the horizon in columns, a sign of war. cf. 46, 170, 350.
173	mauli	Hawaii	an obscure cloud seen at a distance.
174	moere	Tahiti	clear, without clouds.
175	nabūa	Tanna	cloud.
176	nakop	Erromango	cloud. Compare unpokop, heavens.
177	naulu	Hawaii	a thick, dense cloud. cf. 117, 423, 797.
178	naupat	Aneiteum	cloud. The same word means darkness.
179	nenefu	Uvea	cloud. cf. 275.
180	nofoia	Samoa	to rise up, as black clouds hanging on the horizon. nofo, to sit, to rest upon.
181	o	Viti	a cloud; oona, cloudy.
182	okupu	Hawaii	to rise up and cover with dark shades, especially at sea. kupu, to grow large.
183	omalumalu	Hawaii	cloudy and dark, when the sun does not break through. cf. 83, 106, 166, 252.
184	opua	Hawaii	narrow pointed clouds hanging on the horizon. cf. 22, 35, 63, 110, 115, 121, 122.
185	opuakea	Hawaii	to appear, as white clouds. kea, white.
186	opuakii	Hawaii	the clouds in morning or even-

			ing when they take imaging shapes of things. kii, image, picture.
187	owaawaa	Hawaii	thick heavy clouds portending a storm. cf. 118.
188	paekii	Hawaii	low clouds, clouds lying on the horizon.
189	paihi	Hawaii	clear, unclouded.
	paki	Maori	fair, without rain.
	pakiaka	Mangareva	dry, of wind only.
190	paku	Mangareva	a cloudy sky, overcast. paku, roof, covering. cf. 3, 4, 41, 230, 254.
191	palamea	Hawaii	a pure clear atmosphere.
192	palamoa	Hawaii	a bluish cloud, when seen in the east in the morning a sign of rain.
193	paliloa	Hawaii	a kind of cloud that lies low near the shore. Synonym 119.
194	pano	Hawaii	deep, dark colored, as heavy clouds. cf. 42, 107.
195	papalaoa	Hawaii	a smooth kind of cloud indicating rain or wind, from its resembling the fish palaoa.
196	Parekoritawa	Maori	daughter of Hine-nui-te-Po born after that goddess had fled to the shades; she married Tawhaki and went to heaven with him and bore him two children, Uenuku (Rainbow) and Whatitiri (Thunder); when the sky is covered with small clouds they say "Parekoritawa is tilling her garden."
197	paroro	Maori	scud, dark threatening weather, cloudy.
	pororo	Mangareva	a squall.
	pororo	Moriori	cloudy.
	paroro	Rarotonga	winter.
	paroro	Paumotu	the season of dearth.
	vaipalolo	Samoa	the rainy season. cf. 43.

198 parutu	Tahiti	cloudy.
199 paulihiua	Hawaii	a great thickness of dark heavy shining clouds.
200 peti	Mangareva	passing clouds.
201 poa	Niua	cloud. cf. pua, 35.
202 pohuhu	Maori	cloudy, overcast.
203 pohukuhuku	Hawaii	the rising up of a great white cloud. pohuku, smooth and round.
204 poipu	Hawaii	to cover the heavens with thick dark clouds. cf. 135, 365.
205 pokeao	Maori	a dark cloud. poke, soiled. cf. 12.
206 pokeke	Maori	gloomy, threatening weather. po, dark; keke, sullen.
207 poki	Mangareva	cloudy, overcast. cf. 834.
207a polefu	Niuē	mist, fog.
208 polihiwa	Hawaii	a bright, shining cloud. cf. 19, 832.
209 polohiwa	Hawaii	a shining black cloud. cf. 19, 208.
210 poluluhi	Hawaii	thick and heavy, as watery clouds. cf. 103, 109, 159, 212, 219.
211 pomanomano	Hawaii	a place where pointed clouds rise out of the sea. Synonym 213.
212 pooluluhi	Hawaii	cloudy, dark. cf. 103, 109, 159, 210, 212, 219.
213 popuakii	Hawaii	the place where pointed clusters of clouds rise out of the ocean. Synonym 211. pua, cf. 35; kii, cf. 188.
214 porewakohu	Maori	a cloud of thick mist. rewa, cf. 9, 51, 102, 114, 120, 156, 223; kohu, cf. 134, 217, 238, 247, 367.
215 puaarai	Tahiti	white clouds. cf. 35.
216 puao	Samoa	mist. cf. 35, 12.
217 pukohu	Maori	fog, mist. cf. 214.
218 pulawa	Hawaii	to cover the heavens with thick fog or clouds.

219	pululuhi	Hawaii	hazy, foggy, cloudy, dull. cf. 103, 109, 159, 210, 212.
220	punohu	Hawaii	a storm cloud. cf. 224.
221	punuhu	Hawaii	a cloud apparently standing erect having some of the colors of the rainbow.
222	purangi	Maori	straggling clouds. Synonyms 73, 246.
223	pureva	Tahiti	to move quickly. cf. 9, 51, 102, 114, 120, 156, 214.
224	puunohu	Hawaii	the foot of a thick cloud hanging on a mountain cf. 220.
225	puwa	Hawaii	to ascend and remain suspended and shining. cf. 111.
226	ragiragi	Mangareva	to be covered with clouds. cf. 5, 147, 278.
227	ragikorouri	Mangareva	cloudless, fine weather. cf. 140.
228	ragimanega	Mangareva	an azure sky.
229	ragimatoru	Mangareva	thick weather, a cloudy overcast sky. matoru, thick, heavy, dull.
230	ragipaku	Mangareva	cloudy weather. cf. 3, 4, 41, 190, 254.
231	ragirahirahi	Mangareva	a sky covered with light floating clouds with little moisture. rahirahi, fine, slender.
232	rehu	Maori	mist, misty. cf. 165.
233	rugurugu	Viti	cloudy.
234	sau	Vaté	cloud.
235	tafitoga	Tahiti	cloudless, clear sky. tafi, to sweep; toga, the south. tafi, cf. 171, 236.
236	tafito'elaua	Samoa	clear; clouds swept away as by the trade wind. tafi, to sweep. cf. 171, 235; to'elau, the southeast trade wind. cf. 909.
237	tafuna'iga	Samoa	a gathering of clouds to leeward,
238	takohu	Maori	mist, fog. cf. 134, 214, 217, 247, 367.

239	taufanu'u	Samoa	clouds rising from the mountains and spreading toward the sea in the middle of the day. taufa, water, cf. 296, 467, 492, 498; nu'u, land.
240	taulia	Samoa	having dark clouds hanging on the mountains.
241	taupuru	Maori	overcast, gloomy. cf. 48.
242	tautūao	Samoa	to rise up and pass over. tautū, to stand up. cf. 12.
243	ten lang	Vaté	cloud. lang seems the Polynesian rangi, sky.
244	tiao	Tahiti	an overcast sky. cf. 12.
245	tihore	Maori	to clear away, to break.
246	titihau	Maori	straggling clouds. Synonyms 73, 222. cf. 15.
247	tohuura	Tahiti	a red cloud. ura, red. tohu, cf. 134, 214, 217, 238, 367.
248	to'ato'a	Samoa	to be overcast.
249	topuni	Maori	lowering, overcast. puni, to close.
250	toro	Viti	clouds appearing to go against the wind.
251	tubutubu	Tonga	clouds that have a landlike appearance from sea.
252	tukumaru	Maori	cloudy. cf. 83, 106, 166, 183.
253	tuoro	Mangareva	the passage of clouds over one land to another.
254	tupaku	Mangareva	cloudy and calm weather. cf. 3, 4, 41, 190, 230.
255	tutai	Tahiti	red clouds on the horizon.
256	Tuturoroa	Maori	mist personified. cf. 158, 261, 484.
257	uahi	Hawaii	a cloud.
228	uanao	Lifu	a cloud.
259	utiuti	Tahiti	mackerel sky.
260	uwhango	Maori	misty, foggy.
261	vakatuloaloa	Viti	cloudy. cf. 158, 256, 484.
262	valevale	Samoa	threatening. cf. 152.
263	verevere	Mangareva	cloudless blue sky.

264 veroragi	Mangarevà	a cloud terminating in a long point. vero, a spear, a lance. cf. 470, 952, 1221.
265 waihewe	Maori	an invocation for driving clouds away.
266 wall	Laur (New Ireland)	a cloud.
267 yurru	Moreton Bay	a cloud.

Precipitation

Rain, above all the torrential downpours of the tropics, is a meteor far less attractive to the fancy than the cloud fleeces in their stately drift over the sky. The bare islander too little likes the sharp sting of the hissing drops upon his flesh, coming icy cold from upper air, too little enjoys the need to do up his well-oiled hair in rain caps of banana leaves, to exalt the unpleasant weather into the ranks of his primeval ancestors. Yet we do find genealogies which preserve such a record. Even in the Malietoa line heretofore cited we find the Dew-of-life as early as the third generation. But in another stem we find the broad sheets of rain. This is the genealogy of Tuisamau. Not a royal race, despite its title of King-fast-fixed, yet sufficiently respectable to derive frankly from the ultimates and sufficiently high set in Samoan affairs to have been a source of much trouble to those who have had to deal with the political affairs of that scene of strife. Even in the first two generations it will be observed that Tuisamau's genealogy is hopelessly irreconcilable with that of the Malietoas, males in one are female in the other, Tangaloa comes to light far too early, and other differences will become at once apparent. This is not the place to institute comparison between the two, it is sufficient to note that just because these ancient records have not been reduced to an artificial uniformity they possess for the student greater value as original documents. Let us now listen to the tale of the earliest of Tuisamau's progenitors until we find the rain come beating in.

Na usuia e Papatū ʻia Papasosolo,	Rock-erect wedded Rock-gliding,
ʻa faʻaeʻe le gafa a Papanofo.	and set up the stem of Rock-sitting.

‘O Papanofo na usu ‘ia Papa‘ele, ‘a fa‘ae‘e le gafa o le ali‘i ‘o Le Afimūsaesae ma le ali‘i ‘o Po.

Rock-sitting wedded Rock-in-earth, and set up the stem of the lord the Fire-brightly burning and the lord Darkness (Night.)

‘O Po lea na usu ‘ia Aoatasi, ‘a fa‘ae‘e le gafa o Tuisamau; ‘a toe alo ‘o Itu‘au ma Alataua; ‘a fotu ai lea gafa o le tama-‘ita‘i na ‘o Masinaouele ‘o lo latou tuafafine.

This Darkness wedded Day-wnen-it-was-one, and set up the stem of King-fast-fixed; again had sons Host-in-array and War-way; then came into being the stem of the lady Uele's-bright-one (Moon) their sister.

Na usu Le Afimūsaesae ‘ia Sina-oilagi, ‘a fa‘ae‘e le gafa o Tagaloaalagi.

The Fire-brightly-burning wedded the Bright-one-in-the-sky, and set up the stem of Tangaloa-of-the-sky.

Na usu ifo e Tagaloaalagi ‘ia Lopaitu, le tama‘ita‘i Lautolo; ‘o le fāiā muamua lea ‘ia Aiga ma Le Tuamasaga, ‘a fa‘ae‘e le gafa o Tagaloatea.

Tangaloa-of-the-sky condescended to wed Lopaitu the Lautolo lady; this was the first alliance of Ainga (Manono) with the Tuamasanga, and set up the stem of Tangaloa-the-white.

Na usu Tagaloatea ‘ia Masinaouele. ‘O lāua fetaui uigafa le gafa o Po ma Le Afimūsaesae, ‘a fa‘ae‘e le gafa o Timuatea.

Tangaloa-the-white wedded Uele's-bright-one. The union of these two united the stem of Darkness and The Fire-brightly-burning and set up the stem of Sheets-of-rain.

Ona fau ai lea ‘o lo latou va‘a. ‘Ua latou sa‘ili tufuga a le lagi ‘ia Tagaloaalagi. Ona tu‘u ai lea ‘o tufuga e to‘atolu i Fuafua ma Agoago ma Gafagafa. ‘Ua faua le va‘a i Vailoa i talane o Malie. Ona ‘uma ai lea ‘o le va‘a ona latou folau ai lea, ‘o le tupu ‘o Tuisamau ma ona uso ‘o Itu‘au ma Alataua ma lo latou tuafafine ‘o Timuatea ma le toeaina fai mea

Then their boat was built. They asked Tangaloa-of-the-sky to give them carpenters from the sky. There descended three carpenters, these, Measurer, Marker, and Setter-of-stints. The boat was built in Vailoa over against Malie. When the boat was done they set sail, the monarch King-fast-fixed and his brothers Host-in-array and War-way and their sister

e ʻai ʻia te i latou ʻo Alamisi. Ona latou o lea ʻua suʻe motu ʻuma o Samoa.

Sheets-of-rain and the old man who cooked for them Alamisi. Then they went to see all the lands of Samoa.

Ona latou taunuʻu atu ai lea i Manuʻa, o nofo ai le tamaʻitaʻi ʻo Iloasoaʻa, ona usu lea i ai ʻo Timuatea le tama a le tuafafine o Tuisamau ma ona ʻauuso, ona faʻaeʻe lea ʻo le gafa o le tama, toe alo ʻo le tama, toe fotuaʻi ʻo le tamaʻitaʻi.

They landed in Manuʻa, there dwelt the lady Maggot-of-plantains, then wedded her Sheets-of-Rain, the child of the sister of King-fast-fixed and his brethren; then was set up the stem of the child, again the child became a father, again fruited the lady.

Ona fai atu ai lea ʻo Timuatea, le tama a lo latou tuafafine:

Then said Sheets-of-rain, the child of their sister:

"ʻO lau afioga a Tuisamau, seʻi fai mai se igoa o si fanau nei; ʻua na ona fanau lava, ʻa ʻua leai ni o latou igoa."

"Thy Excellency King-fast-fixed, I pray thee make a name for these my dear offspring; they have been born and that's all, they have no names."

Ona pāʻū atu ai lea ʻo le afioga a le tupu ʻo Tuisamau:

Then descended the word of the monarch King-fast-fixed:

"Ia igoa pea tama i loʻu igoa ʻo Tuisamau."

"Let the children be called after my name, King-fast-fixed."

Ona igoa aʻi lea ʻo le tama matua ʻia Tuimanuʻa, ʻa e igoa le teine ʻia Le Malumanuʻa, ʻa ʻua lēigoa le teine itiiti. Ona alu ane lea ʻo le fai mea e ʻai, ʻo Alamisi, ʻua alu ʻia Le Malumanuʻa. Ona fanau ai lea ʻo Tui, toe fanau ʻo Tui, toe fanau ʻo Tui. A fai ʻo le alo o Tui ai e tali ʻatoa le selau o lenei vao Tui. Ona ʻavea ai lea e Tuisamau ma ona uso o le ā o e tufa le vao Tui.

The eldest son they named King-of-Manuʻa, and the maiden was named the Shade-of-Manuʻa, but nameless was the little maid. Then came along he who made the things to eat, Alamisi, he went to the Shade-of-Manuʻa. Then King was born, again King was born, again King was born. When the birth of Kings was accomplished belike there was pretty near a hundred in this grove of Kings. They were carried away by King-fast-

fixed and his brethren who were to go to allot this grove of Kings.

Ona o lea le folauga ʻi Toga, ʻua fai le Tuitoga, toe fai ma Tuiʻanaʻupolu. Ona toe folau lea ʻi Fiti, ʻua fai le Tuifiti. Toe folau Tuisamau ma ona ʻauuso ʻi Uea, ʻua fai foʻi le Tuiuea. Ona latou folau ʻi atunuʻu ʻeseʻese, ʻua tufa ai le lafu Tui nei.

The voyage went to Tonga, made the King of Tonga, again made the King of Kanakupolu. Again they voyaged to Fiji, made the King of Fiji. Again voyaged King-fast-fixed and his brethren to Uvea, made also the King of Uvea. They voyaged to every land soever, they allotted there this flock of Kings.

Ona latou toe foʻi mai ai lea ʻi Samoa. ʻUa toe taunuʻu aʻe foʻi i Manuʻa, ona to ai lea ʻo le niu ma sunuʻi ai le fale talatala ma le fale o Ituʻau ma Alataua. Ia Ituʻau ma le Alataua e leosia le ataliʻi o le tama a lo latou tuafafine. Ona latou toe folau mai ai lea ʻi Tutuila o le ā agaʻi mai ʻi ʻUpolu nei; ona sunuʻi ai lea ʻo le fale o Itu au ma Alataua ma faʻaigoa ai le aliʻi ʻia Tuitele. Ona latou folau mai ai lea ʻi ʻUpolu nei, ona fai ai loa lea ʻo le Tuiatua, toe fai ai ma le Tuiʻaʻana.

They returned to Samoa. Coming up the wind likewise they landed once more in Manuʻa, they planted the cocoanut and marked out there the coarse house and the house of Host-in-array and War-way. This Host in-array and War-way watched over the son of their sister's child. Again they voyaged to Tutuila with their faces set toward ʻUpolu here; they marked out the house of Host-in-array and War-way and named the chief there Great-King. Then they voyayed to ʻUpolu here, quickly made the King of Atua, again made the King of ʻAʻana.

ʻUa iʻu nei le gafa o Tui.

Here ends the genealogy of Kings.

There is a solemn obligation in now for the first time publishing this record of the past to annex a caution that must never be dissociated herefrom. The future investigator desiring to confirm this narrative, possibly hoping to reconcile the remark-

able ability of the lady Sheets-of-rain to become the father of an interesting family, will do well to confine his research to Auimatangi and parts adjacent. There he will find a hearty appreciation and perhaps additional details. Elsewhere on 'Upolu it will scarcely serve to secure him a cordial reception. The man who relates the tale here set down in a circle of Manu'a chiefs is taking a long risk. It is a satire, somewhat of the nature of a campaign document or what you will in the way of pasquinade. I give it as it was given me by Sapolu and gleefully confirmed by the 'Upolu members of the Vaiala cabinet. The nature of the slanders with which this is filled, the animus which underlies the whole ancient scandal, all this will appear for fuller discussion in *Samoa o le Vavau*. It is here introduced because it fits into the plan of the present monograph as showing another association of the phenomena of meteorology interlaced with the earliest account of human origins.

Now, preserving the serial numbering for convenience of cross reference we shall take up the record of the Polynesian words which describe the phenomena of precipitation.

268	afuafu	Samoa	light shower, drizzle.
	afuafu	Tonga	small rain, mist, rainy.
	afuafu	Futuna	fine rain. cf. 68, 84, 428, 495.
269	afuafuua	Futuna	fine rain falling in mist. cf. 493.
270	afuhia	Tonga	wet from driving rain or mist.
271	akarararara	Mangareva	rain falling in fine drops as in heavy mist.
272	akatere	Mangareva	to come from one place to another.
273	akatoau	Mangareva	fine rain, falling mist. cf. 310.
274	akatorikiriki	Mangareva	a slight fog or haze produced by very heavy rain. torikiriki, to come little by little.
275	anehu	Maori	fine, of rain. cf. 179.
276	anotauua	Tahiti	rainy season. anotau, season; ua, rain. cf. 493.
277	aoku	Hawaii	the name of a rain.
278	aolagiā	Samoa	to be cloudy. ao, a cloud; lagiā cf. 147.

279 ataataroa — Tahiti — a rain without intercession. roa, long; cf. 69.

280 aukaha — Maori — to cause rain to cease, to join the clouds or broken sky together; a tropical sense of aukaha, to lace with cord.

281 aurahi — Maori — dew. Synonym haurahi 321. cf. 231.

282 ausa — Samoa — steam.

283 awaawa — Hawaii — fine rain, mist. cf. 352.

284 awahia — Hawaii — a fine rain, mist, spray.

285 babatoa — Tonga — threatening rain.

286 bisa — Viti — to fall.

287 bite — Viti — dew.

287a ehu — Maori — mist.

hehu — Hawaii — mist, vapor. cf. 325, 601, 665, 842.

288 fa'afaletimu — Samoa — to be rainy. fa'a, causative; fale, a house; timu, rain. cf. 85, 474, 674.

289 fa'a'ī'aveloa — Samoa — rain of long continuance. 'ī, cf. 295; 'ave, a ray; loa, long. cf. 127, 404.

290 fa'alauso'o — Samoa — to be overcast. cf. 385.

291 fa'alolo'i — Samoa — to be dark and lowering. loki, Tonga, dark, enclosed, shut up. cf. 297.

292 fa'ama'ulu'ulu — Samoa — to rain slightly. cf. 407, 408.

293 fa'asau — Samoa — to bedew.

fakahauhau — Tonga — to bedew, to expose to the dew. cf. 305, 310, 458, 459, 511.

294 fa'asauaoina — Samoa — to be in the dew all night. aoina, to be dawned upon.

295 fa'atagi'i'i — Samoa — to continue to rain. tagi, cf. 349; 'i, cf. 289, 358.

296 fa'ataufaalemanunu — Samoa — to be like the rain which is only on the manunu. cf. 467, 498. taufa, cf. 239, 492, 886.

297 fa'ataulolo'i — Samoa — to surround with dark clouds. cf. 291.

298	fa'atinifu	Samoa	cloudy.
299	fa'auliuli	Samoa	dark clouds. uli, black, blue.
	fakauliuli	Tonga	dark clouds, a threatening sky.
300	fa'avaitausoa	Samoa	cloudy without wind or rain. va, interval; i, between; tausoa, a load borne on a pole between two bearers.
301	fakagigi	Tonga	to drizzle. cf. 303, 309.
302	gera	Viti	heavy rain.
303	gigi	Tonga	to drizzle. nini. Hawaii, to pour out a liquid. cf. 301, 309.
303a	ginigini	Niuē	small rain.
304	haao	Hawaii	a driving rain with wind at Auaulele. haa, causative; o, to stab.
305	hāhau	Tonga	dew, mist. cf. 293, 294, 310, 458, 459, 511.
	hahau	Niuē	dew.
306	halii	Hawaii	to spread over, as snow on the mountains.
307	haliipili	Hawaii	to extend over, as a shower. pili, united, joining. cf. 154.
308	halukuluku	Hawaii	the sound of a heavy shower pattering. cf. 394, 398.
309	hanini	Hawaii	to pour down as a heavy rain. cf. 301, 303.
310	hau	Hawaii	the general name of snow, frost, ice, cold dew.
	hau	Maori	dew, moisture.
	sau	Samoa	dew.
	hau	Tahiti	dew.
	au	Rarotonga	dew.
	hau	Mangareva	dew.
	hau	Marquesas	air.
			cf. 293, 294, 305, 458, 459, 511, 773, 641, 354. 360, 691.
311	hauhau	Tonga	to get damp with dew.
		Maori	cool.
312	hauhunga	Maori	1, frost; 2, the god of sharp cold. cf. 336.

313 haujia — Tonga — wet with dew.
314 haukea — Hawaii — snow. kea, white.
315 hauku — Hawaii — dew.
316 haumaku — Maori — bedewed. maku, wet, moist. cf. 330.
317 haunui — Maori — dew. nui, great.
318 hauole — Hawaii — without dew, as a barren place. ole, negative.
319 haupapa — Maori — frost, ice. papa, to lie flat.
320 haupuupuu — Hawaii — swollen, as the ground with frost; uneven, as with bunches of hail.
321 hauraki — Maori — dew. Synonym 281.
haurangi — Moriori — dew.
322 haurutu — Maori — dew. cf. 198, 308, 394, 398.
323 hautaku — Maori — bedewed.
323a hautaorua — Maori — dew.
324 hea — Hawaii — a cold rain. cf. 369.
325 hehu — Hawaii — mist. cf. 287a, 601, 665.
326 helelei — Hawaii — to distil as dew. hele, to cause to pass on; lei, to scatter.
326a hihina — Niuē — to drop, of rain.
327 Hinakuluiua — Hawaii — the goddess of rain. Hina, the Polynesian title of all the divinely feminine; kulu, to fall in drops, cf. 331, 382, 422, 485; ua, rain, cf. 493.
328 hoho — Hawaii — snow. cf. hoho, Tonga, soft, yielding, as earth after rain.
329 hookina — Hawaii — to pour down fast. hoo, intensive; kina, to urge on.
330 hoomau — Hawaii — to wet as with dew. hoo, causative; mau, mauu, wet, moist. cf. 316.
331 hoonakulukulu — Hawaii — to drop down, as rain. cf. 327, 382, 422, 485.
332 hoonoe — Hawaii — fine rain. cf. 387, 426.
333 hoopakio — Hawaii — to rain continuously. cf. 437.
334 huahekili — Hawaii — a hail stone (lit. thunder-egg; hail in Hawaii being usually

			accompanied with thunder). hua, an egg; hekili, thunder, cf. 402, 433, 1097.
335	huehue	Hawaii	spreading over, as rain.
336	huka	Maori	frost, snow.
	hukapapa		ice.
	hukapunga		snow.
	hukarere		snow.
	hukatara		hail.
	hukawhatu		hail.
			the basic sense of huka seems to be foam or froth as huahua, Hawaii; in huka, uka, Mangareva; in huka, Paumotu, a bubble of water. cf. 316.
337	hunahuna	Hawaii	fine rain. huna, fine, little. cf. 361, 386.
338	hupe	Tahiti	dew of night. cf. 668.
339	hupevao	Tahiti	dew in the valleys. vao, end of valleys. cf. 130, 339, 485, 517.
340	iliki	Hawaii	to dash, of rain in a storm.
341	ino	Hawaii	a gale, a storm of wind and rain.
342	inuitino	Samoa	to rain heavily, to drench. inu, to drink, cf. 673; i, instrumental; tino, the body, cf. 515. cf. 501.
343	jiauha	Tonga	a little rain but enough to wet. cf. 493.
344	kahakiki	Hawaii,	to pour down violently. kaha, to land with force; kiki, intensive. cf. 689.
345	kahunahuna	Hawaii	a fog, mist. kahuna, to sprinkle,
346	kairakau	Maori	a sharp white frost. kai, to eat; rakau, tree.
347	kakamaroke	Maori	to become fine and dry. maroke, dry.
348	kamumu	Hawaii	the roar of a great rain at a distance. mumu, of sound, indistinct.

349	kanilihua	Hawaii	small misty rain with wind. kani, cf. 295.
350	kaokao	Hawaii	the first drops of a shower, the fore part of a cloud. cf. 46, 172.
351	kapa	Hawaii	rattling, as of rain drops. metathetic for paka, 432.
352	kawa	Hawaii	to rain heavily. cf. 283.
353	kea	Hawaii	the name of rain or mist at Hana and at Koolau on Maui. kea, white.
354	kehau	Hawaii	a cold fine rain floating in the air, mostly in the mountains. cf. 310.
355	keliqele	Viti	to rain heavily. keli, to dig up, cf. 684, 843 ; qele, the soil.
356	kerukeru	Viti	to rain heavily.
357	kewai	Hawaii	mist connected with rain some distance off. wai, sweet water. cf. 357, 687.
358	kikiuha	Tonga	the squeaking noise of a bird on the approach of rain. ki, the shrilling of a bird note, cf. 289, 295 ; uha, cf. 493.
359	kili	Hawaii	to rain fine rain. cf. 691, 692.
360	kilihau	Hawaii	to fall gently, as a soft shower ; to diminish, as the termination of a rain. cf. 310.
361	kilihuna	Hawaii	to be scattered into small pieces like fine rain. cf. 337, 386.
362	kilikaa	Hawaii	to fall in a few drops, to diminish or to be near ceasing.
363	kinakinaragi	Mangareva	1, hail. 2, an insect about four inches long and about the size of a horsehair that falls from the sky in heavy showers of rain. kina, a volcanic stone of fine grain ; slippery.
364	kipe	Hawaii	to pelt, as rain or hail in a storm.

365	kipu	Hawaii	to hold off, as a shower which threatens but does not come. cf. 135.
366	koko	Hawaii	falling rain when the light shines through it and it appears reddish. koko, blood. cf. 509.
367	kokofu	Futuna	mist, fog. cf. 134, 214, 217, 238, 247.
368	kona	Hawaii	the rain accompanying a south wind. cf. 586, 708, 908.
369	konahea	Hawaii	a cold kona rain. hea, a cold rain, cf. 324.
370	konahilimaia	Hawaii	a rain upon the mountains.
371	konaku	Hawaii	a heavy kona rain. cf. 373. ku, to stand up
372	konalani	Hawaii	a fine kona rain. lani, the heavens.
373	konamoe	Hawaii	a cold kona rain. moe, to lie down; cf. 371
374	kopaka	Maori	ice. baku, Malay, to freeze. cf. 520.
375	kopata	Maori	dew. pata, a drop of water. cf. 351, 432, 440.
376	kouaua	Maori	sprinkling rain. cf. 493
377	kuaua	Hawaii	the season of rains. contracted from ka ua ua, frequent rains.
378	kuaukahi	Hawaii	the principal or single rain during the summer months. kahi, one.
379	kuana	Hawaii	a shower.
380	kui	Hawaii	to smite, as hail.
381	kukonukonu	Hawaii	a great increase of rain.
382	kulukulu	Hawaii	to drop silently, as a mist from the clouds. cf. 327, 331, 422, 485.
383	lakofie	Tonga	dry comparatively, of the weather. cf. 1190, 1191.
384	lanipili	Hawaii	a shower reaching to heaven, a very heavy shower. lani, the sky; pili, to cling to, cf. 154, 307.

385	lauso'o	Samoa	to be overspread with clouds. cf. 290.
386	lelehuna	Hawaii	small, fine rain. lele, to fly, cf. 50; huna, a small thing, cf. 337, 361.
387	lilinoe	Hawaii	a sprinkle of fine rain. lili, liilii, small; noe, cf. 332, 426.
388	limua	Hawaii	a long or constant rain, a spell of wet weather. cf. 733.
389	logauha	Tonga	to rain heavily. loga, a flooding, cf. 392, 455, 505; uha, cf. 493.
390	logologouha	Tonga	a sign of rain. logologo, a prognostic; uha, cf. 493.
391	loimata o ao	Samoa	rain; lit. tears of the clouds.
392	lolo	Tonga	to rain in torrents. cf. 389, 393, 395, 455, 505.
393	lologa	Samoa	great rain.
394	loloku	Hawaii	the spattering sound of heavy rain. cf. 308, 398.
395	lovai	Tonga	heavy and continued rain.
		Futuna	deluged with rain.
396	Lugeleng	Yap	the god of rain.
397	luō	Samoa	rainy.
398	lutudave	Viti	to rain heavily. lutu, cf. 308, 394; dave, to flow.
399	Magaragoi	Yap	the god of typhoons and heavy rains.
400	maka	Mangareva	fine, light rain.
401	makahakaha	Hawaii	the ceasing of rain, the slow dropping of rain.
402	makahekili	Hawaii	hailstone. maka, stone, cf. 513; hekili, thunder, cf. 334, 433, 1094, 1097, 1141, 1143.
403	ma'ama'a	Samoa	to rain slightly, to drizzle, to moderate.
404	makavekave	Mangareva	rain that falls with the appearance of threads. cf. 127, 289.

405 makerewhatu — Maori — to fall heavily. makere, to drop, whatu, a stone.

406 makiha — Mangareva — the commencement of fine weather with blue sky after rain.

407 makulu — Hawaii — to drop, as water from the clouds.
ma'ulu — Samoa — to sprinkle.
makulu — Tonga — to drop as rain.
akamakurukuru — Mangareva — to fall often at short intervals.
makuru — Paumotu — rain.
cf. 292, 327, 331, 382, 422.

408 ma'ulu — Samoa — to sprinkle, to drop as dew.

409 malana — Hawaii — a fine rain from the northeast at Waimea. malana, to move along together.

410 maligi — Samoa — pouring rain. liligi, to pour.

410a māna — Niuē — a shower.

410b manakau — Niuē — a light shower.

411 manamana — Tahiti — showery, squally.

411a māo — Niuē — fine after rain, to cease raining.

411b maofu — Niuē — slight rain after heavy, clearing up.

412 măsele — Samoa — a temporary moderation, a lull.

413 matamataua — Mangareva — drops of rain. mata, a drop; ua, cf. 493.

414 mataua — Samoa — a drop of rain.
mataiuha — Tonga — a spot or drop of rain.
mataua — Nukuoro — a raindrop.

415 mihi — Mangareva — fine, of rain.

416 miri — Viti — to rain gently.

417 miti — Samoa — rain or mist on the mountains.

418 moji — Tonga — to drop, as rain. cf. 464, 469.

419 mojimoji — Tonga — a light shower.

420 nahua — Hawaii — the fine rain with the trades on north Maui. cf. 796.

421 nakolo — Hawaii — the sound of pattering rain. cf. 427, 630, 702–6, 1105, 1127, 1131.

422 nakulu — Hawaii — the noise of falling rain. cf. 327, 331, 382, 485.

423	naulu	Hawaii	heavy mists, a shower of fine rain apparently without clouds or with a single cloud. cf. 177, 797.
424	naumati	Samoa	to be dry, destitute of water.
	noumati	Mangareva	weather that is oppressive with heat and drought.
	raumati	Tahiti	to stop raining, to remain fine.
	raumati	Maori	summer.
	laumake	Hawaii	drought. cf. 441.
425	nganga	Maori	hail.
426	noe	Hawaii	to sprinkle a little as fine rain yet scarcely discernible to the eye; mist, fog. cf. 332, 387, 799.
427	noekolo	Hawaii	the small fine rain of the mountains mixed with the thicker of the forest. cf. 421.
428	ohu	Hawaii	a fog, mist, cloud. cf. 68, 84, 268, 269, 270, 495.
429	omo	Hawaii	to evaporate as water and pass into the clouds.
430	paapuhea	Hawaii	a fine rain, mist, or fog. paapu, to be thick. cf. 324, 369, 438.
431	pahululu	Hawaii	a little cloudy and rainy or dripping, not entirely clear.
432	paka	Hawaii	the noise of large drops of rain falling. cf. 351, 440.
433	pakaatutiri	Mangareva	hail, hailstones. compare huahekili 334, makahekili 402. paka, a chip, fragment; atutiri, thunder. cf. 334, 402, 1094, 1097.
434	pakaka	Futuna	sound of falling rain. cf. 432.
435	pakakahi	Hawaii	to drop scatteringly a little rain. kahi, one.
436	pakapaka	Hawaii	a heavy shower.
437	pakio	Hawaii	to rain continually. pa, to beat; kio, a pool. cf. 333.

438	papuhea	Hawaii	a mist, fine rain, fog. cf. 430.
439	para-o-te-langi	Nukuoro	rain. para, dejecta of various sorts; o, of; te, the; langi, sky. cf. 81.
440	patapata	Maori	drops of rain.
	patapataiawha	Maori	heavy rain. cf. 527.
	patapata	Nukuoro	to fall in drops.
	patapatar	Ponape	the sound of falling rain.
	paka	Hawaii	the sound of large drops of rain on dry leaves.
	pakapaka	Hawaii	a heavy shower.
	pakakahi	Hawaii	to drop scatteringly.
	pakio	Hawaii	to fall continually as dropping rain.
	topata	Rarotonga	to fall, as rain or dew.
	pata	Niuē	a drop of rain.
	patanunui	Paumotu	a shower of rain.
	patrapatraka	Malagasy	showers of rain.
	vatravatra	Malagasy	a shower, large drops of rain.
	bata	Duke of York	rain. cf. 351, 375, 432.
441	patinoumati	Mangareva	drought. cf. 424.
442	pereue	Tahiti	dew of night.
443	pesi	Samoa	to beat as a storm.
444	pohihihi	Hawaii	a mist. po, dark; hihi, obscure.
445	pohina	Hawaii	a fine rain or mist, fog, thin cloud.
446	pokaka	Maori	a squall, stormy.
447	pulepe	Hawaii	to rain heavily.
448	puneenee	Hawaii	to pass along, as a shower. pu, to come out; nee, to move along.
449	puroro	Maori	to rain in very large drops that hiss as they touch the ground. cf. 568a, 837, 856, 867.
450	ragipaoa	Mangareva	very dry weather, drought. paoa, poor.
451	ragiua	Mangareva	rainy weather. cf. 493, 1208.
452	rarrar	Ponape	the pattering of raindrops.
453	rauá	Tahiti	a rainy day. cf. 493.
454	rewai	Maori	to rain heavily. rere, to run; wai, sweet water.

455	rorotea	Tahiti	heavy rain. roro, to flood, cf. 43, 197, 389, 392, 393, 395, 505; tea, white.
456	rotu	Tahiti	the sharpest squall of a rainy day.
457	Saato	Samoa	a rain-making god, according to Turner; neither Dr Stübel nor myself has been able to confirm such functions for the well-known aitu Saato. See Turner "Samoa" page 25.
458	sasau	Samoa	heavy dew. cf. 293, 294, 305, 310, 459, 511.
459	sau	Samoa	the dew. Dew is called as follows elsewhere: hahau, Uvea; sasau, Futuna; hau, Tahiti; hau, Maori; au, sau, Mangareva. cf. 293, 294, 305, 310, 458, 459, 511, 773, 641, 354, 360, 691.
460	le sau o le ola	Samoa	rain after drought; literally, the dew of life.
461	taguru	Mangareva	heavy, of rain. guru, deep toned.
462	tahaohao	Maori	to cease raining. cf. 676.
463	takareko	Maori	threatening to rain. taka, cf. 51, 52, 98, 102, 120, 156, 214, 223, 879.
464	tamoti	Futuna	flying clouds which let fall a few drops in passing. cf. 418, 469. moti, to fall a drop at a time.
465	taroi	Tahiti	heavy rain of long duration.
466	tau	Viti	to fall, of rain.
	taubi	Viti	to rain heavily.
467	taufaalemanunu	Samoa	a partial rain. cf. 296, 498. taufa, cf. 239, 492, 886, 887.
468	Tau-Katau	Ponape	the rain god.
469	taumoji	Tonga	a light rain, a sprinkling. cf. 418, 464.
470	tauvero	Tahiti	rainy season. tau, season; vero, storms. cf. 264, 952, 1221.

471	teatea	Mangareva	heavy rain. cf. 455, 490, 491.
472	tequ	Viti	dew.
473	tiafaa	Tahiti	rain, mist.
474	timu	Samoa	rain (timuga).
	timu	Futuna	a blast of wind.
	jimu	Tonga	heavy blowing, almost a hurricane.
	timu	Maori	a commotion, a disturbance. cf. 85, 288, 674.
475	tio	Maori	ice.
476	to	Samoa	to fall, of rain or dew.
	to	Uvea	to fall, of dew.
477	tokia	Maori	wet with dew. cf. 1217.
478	tokiwai	Viti	a light rain.
479	tomairangi	Maori	dew.
	tomaiwhenua	Maori	dew. toto, to ooze; mai, from; rangi, the sky; whenua, land. cf. 482.
480	topatotara	Mangareva	a shower of rain. topa, to fall; totara, 481.
481	totara	Mangareva	said of a short shower of rain. cf. 480.
482	touarangi	Maori	rain. toto, to ooze; ua, cf. 493; rangi, sky. cf. 479.
483	tukutuku-a-kerekerea	Mangareva	rain falling in large drops and in great quantity.
484	tuloaloa	Tonga	dull, dark, showery. cf. 158, 256, 261.
485	tuluvao	Samoa	the drops from the trees after rain.
	turuturu	Nukuoro	to fall in drops. tulu, cf. 327, 331, 382, 422; vao, cf. 130, 339, 517.
486	tunuku	Tonga	dark, thick, as the horizon threatening rain.
487	tuououvai	Tahiti	squall of wind and rain.
488	turaha	Mangareva	the morning dew.
489	tute	Mangareva	a squall, a sudden storm.
490	tuteatea-ki-ruga	Mangareva	1, a white squall appearing in the distance.

2, a deluge of rain.
teatea, cf. 455, 471, 491; kiruga, upward.

491 tuteteatea Mangareva rain falling in waving clouds driven by the wind.

492 tuutuutaufa Tonga squally. taufa, cf. 467.

493 ua Samoa rain.

The following words mean rain as a noun or verb in the several languages specified: Tonga, uha; Futuna, ua; Uvea, ua; Tahiti, ua; Hawaii, ua; Mangareva, ua; Niuē, uha; Paumotu, ua; Maori, ua; Rarotonga, ua; Marquesas, ua; Malagasy, oranā; Java, oudan; Sunda, houdjan; Bali, houdjan; Madura, hodjan; Malay, houdjan; Batak, odan; Dayak, oudjan, ouzan; Bugis, ourăng; Tagalog, olan; Visayas, olan; Timor, oudjan; Rotti, oudan; Manahiki, ua; Fakaafo, uha; Rotumā, uas; Niua, ua; Tanna, nesan; Lifu, mane; New Caledonia, 'ri; Ebon, noot; Moreton Bay, turrumturrum; Bouton, wao; Salayer, bosi; Menado, tahity; Bolanghitano, oha; Sanguir, tahiti; Salibabo, urong; Sulu, húya; Cajeli, u'lani; Mayapo, dekat; Massaratty, dekati; Amblaw, ulah; Tidore, bessar; Gani, ulan; Galela, hura; Liang, hulan; Morella, hulan; Batumerah, hulani; Lariko, haran; Saparua, tiah; Awaiya, uláne; Caimarian, ulani; Teluti, gia; Tobo, u'lan; Ahtiago, roim; Gah, u'an; Wahai, ulan; Matabello, udama; Teor, hurani; Mysot, golim; Baju, huran; Port Moresby, nēdu; Nengone, ebe; Anaiteum, copda; Eromanga, ehe; Fate, usa; Sesake, usa; Api, ua; Ambrym, o; Espiritu Santo, usa; Whitsuntide, uhe; Lepers Island, uhe; Aurora, reu, usa; Meralava, reu; Santa Maria (Gog) urei; Santa Maria (Lakon) uh; Vanua Lava (Pak), wat; Vanua Lava (Sasar), wet; Vanua Lava (Vureas), wen; Vanua Lava (Mosina), wen; Vanua Lava (alo Teqel), wet; Mota, wena; Motlav, smal; Volow, wed; Ureparapara, wen; Torres Islands (Lo), weta; Santa Cruz, ua; Nifilole, lu; Ulawa, nimo; Wango, rangi; Fagani, rangi; Saa, nemo; Bululaha, nemo; Alite, uta; Vaturanga, usa; Florida, uha; Savo, kuma; Bugotu, uha; Ngao, hani; New Georgia, ubata; Duke of York, bata; Murray Island, irmer; Motu, medu. cf. 269, 276, 327, 343, 358, 376, 377, 389, 390, 413, 451, 453, 482, 516, 1042.

494 ua Samoa ʻo le ua na fua mai Manuʻa:

the rain came from Manu'a. Said of one caught unprepared in an event long expected.
e i o le ua tafuna'i: they are the rain drifted to leeward. Said of the vanquished party in a war.

495 uafa'aafuafu Samoa a slight shower. afu, cf. 68, 84, 268, 269, 270, 428, 495.

496 uafa'aaosi'itia Samoa a shower. ua, rain; fa'a, like; ao, a cloud; si'itia, rising.

497 uafa'ataimasa Samoa rain at low tide. taimasa, low water.

498 uafa'ataufaalemanunu Samoa rain confined to the mountains. cf. 239, 296, 467, 492.

499 uafa'ataufanua Samoa a shower coming from inland. fanua, the land.

500 uaga Samoa heavy rain.

501 uainuitino Samoa soaking rain. cf. 342.

502 uakaikahu Maori drizzling rain. kahu, cf. 1058.

503 ua'ale Samoa a shower. kale, Tonga, to run fast.

504 ualā Samoa to be rainy with intermitting sunshine. lā, sun.

505 ualolo Samoa rain causing flood.
uhalolo Tonga heavy rain.
lolo, cf. 389, 393, 395, 455.

506 uatarariki Maori drizzling rain. tarariki, small rays.

507 uatata Maori very heavy rain. tata, close.

508 uatea Samoa rain and sunshine together.
uhatea Tonga rain that falls while the sun shines. tea, white.

509 uatoto Samoa bloody or red rain. toto, blood.

510 uaua Samoa a slight rain.
Mangareva a rainy sun, giving more than ordinary heat.

511 uhafakahahau Tonga a drizzling small rain. faka, like; hahau, dew. cf. 293, 294, 305, 310, 458, 459.

512 uhaia	Tonga	wet with rain.
513 uhamaka	Tonga	hail. maka, a stone. cf. 402.
513a uhatuli	Niuē	hail.
514 uheina	Tonga	wet with rain.
515 uluitino	Samoa	said of a heavy rain. ulu, to enter; i, into; tino, the body. cf. 342, 501, 894.
516 ūtchan	Saipan	rain. cf. 493.
517 vaivao	Tonga	mist, dew. vai, sweet water; vao, herbage. cf. 130, 339, 485.
518 vehivehi	Mangareva	a slight dampness, as dew or the remains of rain.
519 waiua	Hawaii	rain water. wai, sweet water, ua, rain.
520 waipaa	Hawaii	ice. paa, hard; cf. 374.
521 wawa	Maori	to sound like pattering rain.
vava	Tahiti	the noise of wind and rain. cf. 949.
522 wut	Marshalls	rain.
wutrikrik		fine rain.
wutāmuēiliñ		fine sun shower.
wutaret		rain alternating with sunshine.
wuten larimij		short sun shower.
523 wutôr	Marshalls	shower.

Wind Movement

It is not hard to see how early man is led to assign anthropophysical qualities to such meteors as the cloud and the rain. They are before his eye, his vision upward plays fancifully from cloud peak in brilliant shimmer to the relief of the shaded valleys which lie between. As he gazes the cloud upon which his eye is fixed may dissolve and leave no wrack behind, yet in another spot of empty heaven he may watch a new cloud come into being, faint wisps of vapor, then more substantial appearance of snowy masses in which his quick imagination may detect resemblances to the things he knows here below.[1] So

[1] The cloud dialogue of Hamlet and Polonius is particularly apposite when one regards *papalaoa* (195), for *palaoa* is the whale and thus parallels the "very like a whale" of the tragedy.

with the rain, it too is visible, it may be seen marching in solid formation upon the sea, sullen walls of pouring drenching water, it may be seen clinging to some secluded valley in the mountains. As visible manifestations of the powers of nature both rain and cloud readily acquire personality solid enough to appear in the lists of gods and ancestors.

The winds are invisible yet they are seen. The stately minuets of the never resting coconut leaves, the blue line on the green lagoon shallows, the aërial capsizing of the ethereal frigate bird, the march of the clouds, the drift of the rain — all these make the wind as it were visible as well as felt. It is by no means difficult to account for the assignment of human, therefore divine, attributes to the well known winds. Thus they find place in the earliest generations of man. Look back at the Malietoa genealogy to which reference has been made. In the second generation the land appears. At once it enters into wedlock with Wind-above, preëxistent, uncreated, without father and without mother. There is not, there cannot be, anything sexual in these marriages of the mights of nature, the idea is far too rugged to admit of such a sense. But out of the glebe and the caressing wind from on high we are led to a family of winds, the gale equally with the zephyr, thence to the sweep of the day from dawn to dusk, and so at last we come to god supreme.

Now let us look at another genealogy into which the winds enter at a later culture period. In the Malietoa line we have seen the winds as among the immutabilities on which humanity rests. So shall we find them in this list for such period as the two stem in the one trunk, but we shall find the winds reentering during the heroic period after having already served in the divine period. As this tale of the past was given to me by the venerable Le Patū he prefaced it with a title, The Testimony of the Tuamasanga as to the Forefathers of Samoa.

Na usu Papasosolo ʻia Papanofo, tasi ʻo Papatū.	Rock-gliding wedded Rock-sitting, begat Rock-erect.
Na usu Papatū ʻia Papaʻele, tasi ʻo ʻEleʻele.	Rock-erect wedded Rock-in-earth, begat Glebe.

Na usu ‘o ‘Ele‘ele ‘ia Matagialuga, tasi ‘o Aoto‘a.

Glebe wedded Wind-above, begat Cloud-fixed.

Na usu Aoto‘a ‘ia Aolele, tasi ‘o Matagifīlēmū, lua ‘o Matagitafele, tolu ‘o Matagitafulu, fā ‘o Saualeola, ‘o le uso lenei na usugafa.

Cloud-fixed wedded Scud, first came Gentle-wind, second Wind-headlong, third Boisterous-wind, fourth Dew-of-life, this brother became an ancestor.

Na usu Saualeola ‘ia Aopi‘ilagi, tasi ‘o Aofelelea‘i.

Dew-of-life wedded Cloud-clinging-to-the-sky, begat Flying-cloud.

Na usu Aofelelea‘i ‘ia Lagiatea, tasi ‘o Ata, lua ‘o Segisegi, tolu ‘o Taeao, fā ‘o Aoatea, lima ‘o Aoauli, ono ‘o Taugagaifo, fitu ‘o Afiafi, valu ‘o Tausaga.

Flying-cloud wedded Vault-of-sky, first was Break-of-day, second was Morning-twilight, third was Dawn, fourth was Forenoon, fifth was High noon, sixth was Westering-sun, seventh was Evening, eighth was Year.

Here a generation has dropped out, yet it may without difficulty be interpolated from the Malietoa line.

Na usu Lagiaunoa ‘ia Mafolaalelagi, tasi ‘o Tagaloaalagi.

Empty-sky wedded Expanse-of-sky, begat Tangaloa-of-heaven.

Na usu Tagaloaalagi ‘ia Leoleoalagi, tasi ‘o Pili.

Tangaloa-of-heaven wedded Guardian-of-heaven, begat Lizard.

Na usu Pili ‘ia Sinnaaletava‘e le afafine o Tuia‘ana Le tava‘etele, tasi ‘o Saga, lua ‘o Ana, tolu ‘o Tua, fā ‘o Tolufale, lima ‘o Muganitama.

Lizard wedded Demoiselle-the-tropic-bird the daughter of King of A‘ana the Great-tropic-bird, first was Sanga, second was Ana, third Tua, fourth was Three-houses, fifth was Munganitama.

Na usu Lagiaunoa ‘ia Lagituavalu, tasi ‘o Tagaloanofonu‘u.

Empty-sky wedded Eighth-heaven, begat Tangaloa-settled-on-the-land.

Na usu Tagaloanofonu‘u ‘ia Lagilagiā, tasi ‘o Tagaloasu‘enu‘u.

Tangaloa-settled-on-the-land wedded Sky-beclouded, begat Tangaloa-seeking land.

Na usu Tagaloasu‘enu‘u ‘ia Tuio-

Tangaloa-seeking-land wedded

lalonei, tasi ‘o Valavala. ‘O le tama lenā fai lona nofoa vaeloloa. ‘A ‘o Tagaloasu-‘enu‘u na ia lua‘i iloa Le Toto‘amea, ona nofo ai lea ‘o le ali‘i i nai aso itiiti, ona toe fo‘i i lona tamā. ‘A e nofo lona atali‘i i le lalolagi.

King-of-down-below-here, begat Far-apart. This chief had a stool with long legs. But Tangaloa-seeking-land again knew Gentle-one, the chief remaining there but a few days and returned to his father. But his son remained on earth.

Ona toe fanau lea ‘o Lagilalagiā, ‘o le ulupo‘o lana tama.

Sky-beclouded again gave birth, a skull was her child.

‘O le ulupo‘o lenā na pā‘ū ifo ‘i le lalolagi, ona tago ai lea ‘o Valavala, ‘ua fa‘ae‘e le ulupo‘o ‘i lona nofoa vaeloloa. Ona fai ai lea ‘o lana mo‘omo‘oga (ia fai se tino o le ulupo‘o) e fai mona atali‘i la te to‘alua i le lalolagi. Ona te‘i lava lea fai le tino o le ulupo‘o ‘o le tama tane. ‘Ua ‘upu le tama ma ‘ua atamai.

This skull fell down to the earth and Valavala grasped it and set the skull on his longlegged stool. Then arose his desire (that the skull should have a body) to make him his son, they two together in the world. Then all of a sudden the skull got the body of a man child. The child had speech and was wise.

Ona fesili lea ‘o Valavala ‘i le tama: “Ofea o?”

Far-apart asked the child: “Whither do we go?”

Ona tali lea ‘o le ulupo ‘o: “‘O taī o, ‘o utā o, sisifō o, sasa‘ē o, lugā o, lalō o.”

The skull replied: “Seaward we go, inland we go, westward we go, eastward we go, up we go, down we go.”

Ona fai atu lea ‘o lona tamā: “Sē, ‘ua lelei, ‘ua ‘e atamai, ‘ua ‘e iloa itūlagi ‘ese‘ese.”

Then said his father: “Child, ’tis well, thou art clever, thou knowest the divers regions of the heavens.”

Ona fa‘apea atu lea ‘o le tama: “Lenā! Na maua lo‘u igoa ‘o Itūlagi‘ese‘ese.”

Thus spake the child: “There now! I have gotten me a name, Divers-regions-of-the-heavens.”

Na usu Itūlagi‘ese‘ese ‘i le savili o gaga‘e, tasi ‘o Tui. Toe usu ‘i le savili o gagaifo, tasi fo‘i ‘o Tui. Toe usu ‘i le savili o tai, tasi fo‘i ‘o Tui. Toe usu ‘i le

Divers-regions-of-the-heavens wedded Breeze-of-the-east, begat a king. Again married Breeze-of-the-west, begat a king also. Again wedded Breeze-

savili o uta, tasi fo'i 'o Tui. 'O usuga nei na aiga ai itū e fā o le lalolagi.

of-the-sea, begat a king also. Again wedded Breeze-of-the-land, begat a king also. These marriages are they which make the four regions of the earth one kin.

Ona toe usu lea 'o le tama nei 'ia Vaisalalau, tasi 'o Imoapu'u.

Once more this chief wedded Waters-abroad, begat Short-rat.

Na usu 'o Imoapu'u 'ia Imoaloa, tasi 'o Ila lēgagana, 'o le tama-'ita'i lenā 'o lona faiva o le laga-'ie. 'O Ila fo'i lenei na na 'avane le to'oto'o 'ia Le Apai e 'ave i lana malaga.

Short-rat wedded Long-rat, begat Ila the dumb, this lady's duty was the weaving of fine mats. And this is that same Ila who gave away the staff to Le Apai to carry in his voyage.

Na usuia Ila e Tuiaolele, tasi 'o Sinasegi. 'O le tama'ita'i lenā e ona le nu'u na segi ai Le Apai 'a e le'i maua.

Ila was wedded by King-flying-cloud, bore Demoiselle-coy. This is the lady whose was the land at which Le Apai snatched but did not get.

Ona toe fanau lea 'o Imoaloa, tasi 'o Salevao. 'O le tama fo'i lenā sa na fa'aali mea faigatā 'ia Li'o le matefili. 'O le ta'ua lava lenei e ta'ua ai 'o ia 'o le aitu Salevao.

Again Long-rat gave birth, bore Dread-one-of-the-forest. This child it was who made plain the hard things to Li'o the soothsayer. For this telling he is called the god Salevao.

Salevao brings us to a different conception of the winds, no longer anthropophysical but in other ways recalling the Æolus type of myth familiar in more northern folklore. Dr Stübel has included it, or more correctly his Samoan assistant, Meisake, has interpolated it into the story of Ti'iti'i, for in my own collection as derived from the same original source it is lacking. It runs as follows :

Ona manatu ai lea 'o Ti'iti'i e tatau ona fa'apotopotoina 'o matagi ma utu 'i pūpū, 'a e tau 'o le fisaga e lelei e mālū 'i tino. 'Ua 'uma matagi i 'Upolu 'ua

Ti'iti'i thought he should collect the winds and bottle them up in a coconut shell, except the northwest wind which was good to cool the body. When

totoe le matagi e tasi i Savai'i, 'o le la'i.

Ona alu ai lea 'o Ti'iti'i ma ana tulafale 'i Savai'i ina ia utufia 'o le la'i 'i se pūpū. Ona va'ai a'e lea Fatuatī ma Fatuatā 'i le maile mūmū 'o lo'o ta'a i le gutu o le ana.

Ona fai atu lea 'o i lāua 'ia Ti'iti'i la te manana'o 'i le maile.

Ona alu atu lea 'o Ti'iti'i 'i le maile, ona sola lea 'o le maile 'i totonu o le ana. Ona momoe atu lea 'o Ti'iti'i 'i totonu o le ana e pu'e mai le maile; 'a 'ua so'o loa le gutu o le ana, ona oti ai lea 'o Ti'iti'i i totonu o le ana, auā e lē se maile 'o le aitu Salevao.

'O le mea lea a agi mai le la'i mai Savai'i ona mālili lea 'o fua o la'au, 'o niu ma 'ulu, ona fa'apea lea 'o le 'upu 'ua māumau le fuata, 'ua lē toe aogā, 'ua la'ia. 'A 'o le taofi i ai 'o le matagi 'ua 'aumai le elo o le tino o Ti'iti'i.

the winds in 'Upolu were finished there remained one wind in Savai'i, the west wind.

Then Ti'iti'i went with his speaking men to Savai'i to bottle up the west wind in a coconut shell. Fatuatī and Fatuatā looked up and saw a red dog loose in the mouth of a cave.

Then said they two to Ti'iti'i they wanted the dog.

Ti'iti'i went toward the dog but the dog ran back within the cave. Then Ti'iti'i came running within the cave to catch the dog, but the mouth of the cave came to with a sudden snap and Ti'iti'i died within the cave, for it was no dog but the god Salevao.

Therefore, when the west wind blows from Savai'i and the fruits of the trees, the coconut and the bread-fruit, fall untimely then the word goes round that the crop is spoiled and is no more good and is blasted by the west wind. The belief is that the wind has brought the stench of Ti'iti'i's body.

One more citation will show us the winds reduced to mere meteorology. Fornander cities it from the creation chant of the Marquesas collected by Lawson.

Pu te matani me Vevau
A anu te tai o Hawaii,
Pu atu te metani me Hawaii
A anu te ao o Vevau.

Blow winds from Vavau
And cool the sea of Hawaii,
Blow back winds from Hawaii
And cool the air of Vavau.

Thus pleasantly are we led to the check list of the Polynesian wind words:

524 aa — Hawaii — a sea breeze at Lahaina. Synonym 740.

525 ae — Hawaii — an east wind. ae, upward, as also luga, above, is commonly applied to the windward, being in the prevalence of the trades in Polynesia an easterly direction. cf. 726, 772, 779, 884.

526 aeloa — Hawaii — the northeast trade upon the ocean. loa, intensive.

527 afā — Samoa — a storm.
cavā — Viti — a hurricane.
afa — Tonga — storm, hurricane.
afàā — Futuna — tempest, hurricane.
afa — Uvea — gale.
awhā — Maori — tempest.
afā-tokai-maka — Niuē — hurricane.

528 añ — Marshalls — wind. cf. 529.

529 agi — Samoa — to blow.
cagi — Viti — the wind, atmosphere.
agi — Tonga — to blow.
agiagi — Tonga — to spring up, said of a breeze
agi — Niuē — to blow.
agi — Futuna — to blow.
agiagi — Uvea — to blow.
ani — Hawaii — to blow softly, as a gentle breeze.
agi — Mangareva — a light wind, a zephyr, to blow softly.
agi — Nukuoro — the wind.
angi — Maori — air, wind, light breeze.

In the Malay tract the following words mean wind: Malagasy angină, aninā; Java, angin; Sunda, angin; Bali, hangin; Madura, angin; Malay, angin; Lampong, angin; Batak, angin; Dayak, angin; Makassar, anging; Bugis, anging; Tagalog, hangin; Visayas, hangin; Timor, anin; Rotti, anin. cf. 528, 616, 652, 695, 701, 710, 761, 783, 813, 980, 1029.

530 agiga — Tonga — the point of the compass from which the wind blows.

531 agilaufola — Samoa — to blow steadily without squalls.

laufola, steady ; lau, breadth ; fola, spread out. cf. 729.

532 agina — Tonga — to be carried away by the wind.
533 agipō — Samoa — to blow at night. pō, night.
534 ahauru — Maori — a mild, genial night breeze. uru, cf. 61, 560, 585, 586, 591, 644, 677, 769, 840, 883, 891a, 936, 940–3.
535 ahe — Hawaii — a slight breeze. ahe, light, gentle, soft. cf. 795.
536 ahekolo — Hawaii — a gentle breeze. kolo, to creep.
537 aheu — Maori — a changeable wind from the southwest.
538 ahiu — Hawaii — a wind.
539 ahoahoahurifenua — Tahiti — a hurricane. ahoahoa, storm, cf. 1161 ; huri, to overturn, cf. 627, 667, 669, 901, 952 ; fenua, the land.
540 ahuangawari — Maori — to decrease, of wind. ahua, to be like ; ngawari, soft, gentle.
541 ahuru — Maori — a wind. ahuru, snug, warm, comfortable.
542 aine — Tahiti — west wind.
543 aio — Mangareva — to lull.
aio — Maori — to be calm after a storm.
aiopīpī — Maori — a very great calm.
aiorangi — Maori — calm sky above.
aiotaketake — Maori — a settled calm.
544 aire — Marshalls — a whirlwind.
545 akaku — Hawaii — subsidence of a wind or storm.
546 akarena — Mangareva — a waterspout. aka, causative ; rena, to scatter abroad.
547 akarua — Mangareva — the northeast wind. cf. 632.
548 Alaamaomao — Hawaii — name of a god of the winds. cf. 1061a.
549 alani — Hawaii — a land breeze on Lanai named from the mountain of the same name.
550 alau — Hawaii — a place where the wind is parted, as the east wind at Hana, Maui.

551 alo — Tonga — the height of the wind in a hurricane. cf. 605, 1163.

552 amio — Mangareva — to come from every direction, to turn hither and thither, to blow in puffs, to whirl in eddies.

matagi amio — Mangareva — a squall.

amiomio — Tonga — to change repeatedly.

amiomio — Maori — to turn round and round.

553 amoamo — Hawaii — a sudden change in the wind.

554 anauru — Tahiti — high wind. cf. 939.

555 aneane — Hawaii — to blow softly.

aneane — Tahiti — clear, as a fine atmosphere.

hanene — Maori — to blow softly. cf. 638.

556 aniwaniwa — Maori — a whirlwind. cf. 10, 1046.

557 anukawerawera — Maori — warm airs, breezes indicative of summer. cf. 62, 1032, 1041, 1042.

558 anumahana — Maori — warm airs of spring. cf. 1008.

559 aoaoa — Hawaii — a pleasant sea breeze at Honolulu. cf. 606.

560 aomauru — Maori — gentle steady winds. cf. 61, 534, 585, 586, 591, 644, 677, 769, 840, 883, 891a, 936, 940–3.

561 apaa — Hawaii — the name of a wind. paa, to blow. cf. 811.

562 apaapaa — Hawaii — a strong wind blowing over at Kohala Point.

563 apoomatai — Tahiti — the wind's eye. apoo, source; matai, wind.

564 apu — Maori — a squall, a gathering together of winds. pu, to blow.

565 apuaroa — Tahiti — a pleasant breeze.

566 apuhau — Maori — a fierce squall, gust, sudden rushing wind. cf. 310, 641. hau, wind.

567 apumatangi — Maori — a squall. cf. 761.

568 apuroaohau — Maori — a whirlwind. roa, long; hau, wind. cf. 640.

568a	apurorowhio	Maori	a whirlwind. roro, to blow; whio, to go round. cf. 591, 578, 867.
569	aputai	Maori	a violent squall at sea. tai, the sea.
570	arafenua	Tahiti	land breeze, west wind. ara, a path; fenua, land.
571	arahau	Maori	a narrow current of air. ara, path; hau, wind. cf. 641.
572	aramoi	Lamotrek	Arcturus, its rising marks the end of the northeast winds.
573	arapae	Tahiti	a land breeze.
574	arawaru	Maori	a mysterious sound heard at times in the air and possessing magical power.
575	aripo	Tahiti	to be set in motion by a whirlwind.
576	aruemaoro	Tahiti	the southwest wind. cf. 769.
577	arueroa	Tahiti	southwest wind, land breeze.
578	asiosio	Samoa	whirlwind, waterspout.
	ahiohio	Tonga	whirlwind, waterspout.
	hiohio	Niuē	whirlwind.
	asiosio	Futuna	whirlwind, waterspout.
	puahiohio	Tahiti	whirlwind.
	puahiohio	Hawaii	whirlwind.
	awhiowhio	Maori	whirlwind. cf. 568a.
	siosio	Nukuoro	waterspout. In Nukufetau a disease god in the waterspout caused sickness in the house toward which it was moving. cf. 568a, 591, 657.
579	atararanga	Maori	to blow gently. ata, gently; ranga, cf. 861.
580	atiamuri	Maori	name of a wind. muri, a breeze. cf. 791, 707.
581	atiu	Maori	a northwest wind. cf. 610, 643, 693, 711, 900, 925, 940.
582	atoatoa	Tahiti	high wind. cf. 901.
583	aumumu	Maori	an eddy wind. cf. 74, 788.

584 āuō — Samoa — a calm.

585 auru — Maori — the west wind. cf. 61, 534, 560, 586, 591, 644, 677, 769, 840, 883, 891a, 936, 940–3.

586 auru-ma-tonga — Maori — the southwest wind. tonga, south. cf. 908.

587 avagariri — Mangareva — a gale, tempest, gust, squall.

588 avalevale — Samoa — to blow gently; to veer around in all directions.

589 avatufa — Tahiti — calm, hot weather.

590 awanga — Maori — the cold southwest wind.

591 awhiouru — Maori — a whirlwind. awhio, cf. 578; uru, cf. 585.

592 bateto — Tonga — said of a searching wind.

593 bonobonoi — Tonga — foul, dead ahead.

594 bubu — Tonga — to blow gently from any quarter after a calm. cf. 839.

595 caucau — Viti — the land breeze. cf. 641.

596 ceva — Viti — a south or southeast wind.

597 cevaruru — Viti — to whistle, of the wind.

598 civo — Viti — a sudden gust of wind from the mountains.

599 covulaca — Viti — whirlwind, waterspout. covu, to peck; laca, a sail; the classic type of waterspout somewhat resembling the pointed Fijian mat sail.

600 eelokoa — Hawaii — a northeast storm at Waimea.

601 ehuehu — Hawaii — 1, a strong wind blowing severely.
2, darkness arising from dust, fog, or vapor.
cf. 287a, 325, 665.

602 eka — Hawaii — a sea breeze at Kona.

603 elau — Hawaii — the commencement of a breeze.

604 emi — Tonga — to shift.

605 fa'aalo — Samoa — to commence to blow a gale. cf. 551, 1163.

606 fa'aaoi'a — Samoa — a slight squall. cf. 12, 559.

607	fa'afoga'upolu	Samoa	east wind. foga, cf. 625, 626, the face of 'Upolu, eastward as seen from Savai'i. cf. 765, 928.
608	fakamumuhu	Tonga	the howling of the wind. cf. 789.
609	fa'atama'ima'i	Samoa	to be light. tama'ima'i, small.
610	fa'atiu	Samoa	a northerly wind.
	fakatiu	Futuna	a northwest wind.
	fakatiumuli	Futuna	a northwest wind. cf. 581, 643, 693, 711, 900, 925, 940.
611	fa'atiufagalua	Samoa	a northerly wind. cf. 632, 633, 658, 662.
612	fakatofu	Tonga	to cease blowing, to die away. cf. 880, 904.
613	fakatofukaehiko	Tonga	to fall calm before a strong breeze. kae, but; hiko, to blow as in a hurricane. cf. 653, 907.
614	fakatofutofu	Tonga	to become calm.
		Futuna	dead calm. cf. 906.
615	farara	Tahiti	to blow.
616	feagiagiaki	Tonga	to vary from point to point. reciprocal of agi, to blow. cf. 529.
617	felefele	Samoa	said of a complicated wind.
618	fematagiaki	Tonga	a wind to and from the same place. reciprocal of matagi used in a verb sense. cf. 761.
619	feng	Nukuoro	the northwest trade (sic) wind.
	fun, fung	Chinese	wind.
	le'feng	Mortlocks	season of the northwest trades.
	afong, paliafong,	effeng Micronesia	the northern quarter.
	n'fen, n'feng	Yap	wind in general.
620	fepalapua'i	Samoa	to rush together, as winds down adjacent gullies. reciprocal of palapu 817.
621	fetafueaki	Tonga	to blow in gusts from different directions in succession. reciprocal of tafue 876.

622	fetatube	Tonga	to flap in the wind. reciprocal of tatube, to shake, to flap.
623	feto'i	Samoa	to moderate.
	hetoki	Tonga	to fall.
624	fisaga	Samoa	a gentle northwesterly wind.
625	foganu'u	Samoa	a night breeze from off shore. foga, the face of; nu'u, the land. cf. 607.
626	fugalofi	Futuna	a southwest wind. fuga, the face of; Alofi, an island near Futuna. cf. 607.
627	fulikele	Tonga	great, powerful in effect, said of a hurricane. fuli, to turn over; kele, the soil. cf. 667, 669, 539, 901.
628	gaeke	Tonga	to move, as wind, to shift.
629	giegie	Mangareva	a zephyr, a light gentle wind.
630	gogolo	Samoa	the rushing sound of wind. cf. 421, 427, 702, 1105, 1127.
631	guaife	Saipan	to blow.
632	haapiti	Tahiti	northeast wind. Both piti and rua, as in the next entry, mean two; the relation to wind movement or direction is of the most obscure, yet it is far-reaching. cf. 547, 611, 658, 662, 735, 748, 749, 750, 826.
633	haarua	Tahiti	northeast wind.
634	hagahagai	Tonga	a head wind, right opposite.
635	haiula	Hawaii	the red or yellow (ula) appearance of the dust raised by a whirlwind, or something similar in a waterspout.
636	halai	Hawaii	the lulling of a strong wind, a calm. cf. 721a.
637	halula	Hawaii	a calm. cf. 737.
638	hanene	Maori	to blow softly, as a gentle breeze. cf. 555.
639	haoeoe	Hawaii	rushing sound of wind among the trees. oeoe, to whiz, to make an indistinct continued sound.

640	hau	Hawaii	the land breeze which blows at night, any cool breeze.
	hau	Maori	wind.
	hawa	Malay	wind.
	oa	Solomon Islands	wind.
	hayop, hoyop	Bicol	to blow.
			cf. 568, 773, 842a, 683, 908a, 856, 979, 980, 993, 1177, 1214.
641	hau	Mangareva	to blow, to be boisterous. cf. 15, 246, 310, 566, 571, 568, 595, 773, 829, 908a, 934.
642	hauarahi	Maori	the west wind. arahi, to lead, to guide.
643	hauatiu	Maori	the northwest wind. cf. 581, 900.
644	hauauru	Maori	the west wind. cf. 61, 534, 560, 585, 586, 591, 677, 769, 840, 883, 891a, 936, 940–3.
645	haumoe	Tahiti	a land breeze, cold night breezes of the valleys. moe, to sleep. cf. 310.
646	haupongi	Maori	an eddy wind. cf. 834.
647	hauwhenua	Maori	land breeze. whenua, land.
648	havili	Tonga	a gale, a blast, to blow hard. cf. 872.
648a	havili	Niuē	the wind; to blow.
649	haviligia	Tonga	to be overtaken by hard blowing.
650	havilivili	Tonga	a gentle breeze, air; to blow gently.
651	he	Hawaii	to roar, as a strong wind.
652	hengi	Maori	to blow gently. cf. 529, 701, 710, 813.
653	hiko	Tonga	to blow as a hurricane. cf. 656.
654	hikumatagi	Tonga	the end or finishing of a hurricane. hiku, tail. cf. 671, 672.
655	hilatalifaki	Tonga	to blow from the direction in which lightning was seen.
656	hio	Hawaii	a slanting wind, a wind down a hill. cf. 653, 1068.

657	hihio	Hawaii	to blow violently. cf. 578.
658	holua	Hawaii	a strong north wind, generally in winter. cf. 632.
659	hono	Hawaii	the name of a place where the wind meets some obstruction and is reflected back.
660	hookauahe	Hawaii	light, gentle breeze. ahe, light, gentle.
661	hookui	Hawaii	to roar. kui, to make a noise.
662	hoolua	Hawaii	name of the strong north wind and the rain it brings. cf. 632.
663	hu	Hawaii	to whistle as the wind in the rigging.
	hu	Motu	the noise of the wind.
	huga	Paumotu	hurricane.
664	huaai	Hawaii	1, a kind of wind. 2, to open as a reservoir of winds.
665	huehu	Hawaii	a strong cold wind. cf. 287a, 325, 601.
666	huihui mania	Tahiti	profound calm without wind. mania, calm.
667	hulilua	Hawaii	blowing two ways. huli, to turn, cf. 539, 627, 669, 901, 952.
668	huipe	Tahiti	the land breeze. cf. 338.
669	hurifenua	Tahiti	a tempest. huri, cf. 667.
670	ihuanu	Hawaii	name of a wind upland of Kawela. ihu, nose; anu, cold. cf. 963.
671	iku	Mangareva	a gentle breeze. iku, tail. cf. 654.
672	i'umatagi	Samoa	the end of a storm, clearing-up shower.
673	inuwai	Hawaii	name of a sea breeze at Lehua, Kauai. inu, cf. 342.
674	jimu	Tonga	heavy blowing, almost a hurricane. cf. 288, 474.
675	kaao	Hawaii	to be calm in some places while the wind blows on one side.
676	kahau	Hawaii	to abate. cf. 462.

677	kaiaulu	Hawaii	a strong wind off Waianae. cf. 644.
678	kanoenoe	Hawaii	the northeast trade. cf. 799, 800.
679	kaomi	Hawaii	the name of the northeast trade on the east coast of Lanai and Maui. kaomi, to press down upon. Synonym 779.
680	kapekape	Maori	the northwest wind.
681	kauaula	Hawaii	a strong, often dangerously destructive wind from the mountains occasioned by the breaking over of the trade wind.
682	kawai	Maori	the sea breeze. cf. 687.
683	kehau	Hawaii	1, the gentle land breeze at night on the west side of Hawaii. 2, the mountain breeze in the morning anywhere. cf. 640.
684	keri	Maori	to rush along violently. cf. 355, 843.
685	ʻeti	Samoa	to blow fresh.
686	keu	Futuna	the south wind.
687	kewai	Hawaii	wind from a place of rain. cf. 357, 682.
688	kihee	Hawaii	to blow.
689	kikiao	Hawaii	a squall, a sudden gust, a strong wind. kiki, to spurt; ao, cloud. cf. 344.
690	kikifi	Futuna	to increase, grow stronger.
691	kilikilihau	Hawaii	to blow gently.
692	kilioopu	Hawaii	a wind at Waihee, Maui. cf. 359.
693	kiu	Hawaii	1, a strong wind at Honuaula, Maui, occasioned by the trades breaking over the mountains. 2, the northwest wind at Hana, Kaupo, and elsewhere; very similar to hoolua. cf. 581, 900, 930.
694	kiur	Marshalls	stiff breeze.

695	koaniani	Hawaii	to breeze up and become cool. Synonym 827. cf. 529.
696	koaniani	Hawaii	a cool breeze.
697	ködo	Marshalls	wind.
698	kôdu	Marshalls	east wind.
	kôdu ian in āl		east-northeast wind.
	kôdu irök in āl		east-southeast wind.
699	kofe	Tonga	to blow fair.
700	ʻogamatagi	Samoa	a circumscribed gust. ʻoga, trunk.
701	kohengi	Maori	wind. cf. 652.
702	kokolo	Futuna	sound of wind whistling in the trees.
703	koloapuupuu	Hawaii	the name of a wind. cf. 859.
704	kolokolonahi	Hawaii	a very gentle wind. kolokolo, to creep; nahi equivalent to nahenahe 795.
705	kololio	Hawaii	1, a very strong wind at sea such as would swamp canoes. 2, a breeze on one side or between two other winds. kolo, to creep; lio, to act wildly. cf. 785.
706	kolonahe	Hawaii	a gentle, pleasant breeze. cf. 795, 832.
707	komuri	Maori	zephyrs, soft airs. cf. 580, 791.
708	kona	Hawaii	a southwest or west wind. cf. 368, 586, 908.
709	korowheowheo	Maori	blowing in whirls or eddies. koro, a noose.
710	kotengitengi	Maori	a gentle wind. cf. 529, 652, 701.
711	kotiu	Maori	the west wind. cf. 581, 900.
712	kualau	Hawaii	a gale of wind; wind and rain upon the sea.
713	kuikui	Hawaii	blowing strongly; more commonly pakuikui. kui, to strike. cf. 380.
714	kukeku	Hawaii	the scattering of dust before the wind. kuke, to drive off; ku, intensive.

715 kulepe	Hawaii	the wind blowing in the middle of a channel. ku, to be; lepe, diagonal. cf. 759.
716 kumumaomao	Hawaii	an easterly wind on Oahu. cf. 755, 756.
717 kunu	Hawaii	a soft, gentle wind.
718 kupe	Moriori	calm. cf. 145.
719 kupapaula	Hawaii	to have the wind head on.
719a lae	Hawaii	calm. cf. 99, 101, 721a, 1184, 1188.
720 lafalafa	Samoa	northerly wind.
721 lafalafamoana	Samoa	a gentle westerly wind. moana, the deep sea.
721a lai	Hawaii	calm. cf. 636, 719a.
722 laiku	Hawaii	a calm. ku, intensive.
723 la'i	Samoa	a westerly wind.
laki	Niuē	the northwest wind.
lagi	Vanikoro	the west.
raki	Maori	the north. cf. 822, 860, 921, 938.
724 la'io'atoa	Samoa	westerly wind at full moon.
725 la'iopupula	Samoa	westerly wind at new moon.
726 lalo	Niuē	the west wind. cf. 525, 772, 779, 884.
726a lau	Hawaii	a stray puff. cf. 712.
727 lauawa	Hawaii	a wind at Hana, Maui. cf. 550.
728 laufala	Samoa	This wind was included among those bottled up by Ti'iti'i in a version collected by Stair.
729 laufola	Samoa	steady. cf. 531.
730 laulafalafa	Samoa	a northerly wind. cf. 720.
731 lautasi	Samoa	steady.
732 lauwili	Hawaii	to whirl about, changeable. wili, to twist, to turn around. cf. 112, 959.
733 limulimu	Hawaii	shiftings of the wind. cf. 388.
734 liwa	Viti	to blow.
		The following words mean tempest: Malagasy, rivoutra; Java, ribout; Sunda, ribout;

Malay, ribout; Dayak, riwout; Macassar, rimbou; Bugis, riwou.

735 luatuù — Futuna — the southeast wind. cf. 632.

736 lugaluga'i — Samoa — to increase in violence after a partial cessation. luga, above, over.

737 lula — Hawaii — calm. cf. 637, 818.

738 lulu — Hawaii — a calm.

rurua — Tonga — a lull. cf. 870, 871, 751, 793, 917.

739 lutaluta — Samoa — to blow hard, to be at the height of the storm. ruta, Maori, rage, bluster.

740 maa — Hawaii — the Lahaina sea breeze. Synonym 524.

740a mahagoa — Niuē — calm.

741 mahea — Moriori — the name of a wind.

742 maifiifi — Futuna — wind which blows lightly. maifi, Futuna and Tonga, the sensation of wind as when anything passes near the face; ifi, Tonga, to blow.

743 maili — Samoa — to commence to blow, to spring up, of a breeze.

maili — Tonga — idem.

744 mala — Hawaii — a gentle breeze, the east wind.

745 malaelae — Hawaii — clear, calm, pleasant weather. cf. 719a.

746 malanai — Hawaii — the gentle blowing of the northeast trade.

malagai — Niuē — the east-southeast trade.

marangai — Maori — 1, the east wind.
2, a gale of wind with rain.

maraai — Tahiti — the south wind.

maragai — Mangareva — the southeast wind.

maragai — Mangaia — the east. cf. 758, 858.

747 malie — Hawaii — calm.

meie — Marquesas — serene, fine. cf. 105.

748 maluahele — Hawaii — name of a northwest wind on Kauai.

749	maluakele	Hawaii	a wind blowing mostly on Kauai.
750	malualua	Hawaii	1, the northwest wind at Lahaina. 2, a wind on Kauai. 3, a north wind on Oahu.
751	malūlū	Samoa	to be calmed.
	malulu	Tonga	growing mild, of wind. cf. 738.
752	mananai	Hawaii	a gentle breeze. Compare malanai 746.
753	mánglo	Saipan	wind.
754	mānino	Samoa	to be calm.
	manino	Tahiti	calm.
	manino	Hawaii	calm.
	malino	Nukuoro	calm.
	marino	Rarotonga	calm.
	marino	Maori	calm, especially at sea.
	marino-to		very calm.
	marino-tokitoki		very calm.
	marino	Paumotu	calm.
	menino	Marquesas	calm.
	merino	Mangareva	calm.
	merinokura		dead calm.
	merinotuapipi		a light zephyr.
	milino	Niuē	calm.
	malinao	Bicol	calm.
	marne	Formosa	calm.
755	mao	Samoa	a lull in the wind.
	maomao	Tonga	dry, the interval between showers.
	mao	Futuna	to stop raining.
	mao	Maori	to leave off raining.
	mao	Tahiti	to cease raining.
	mao	Hawaii	to pass away, as fog or cloud. cf. 716.
756	maoaé	Tahiti	the east wind. ae, cf. 525, 726, 779. cf. 716, 755.
757	mapu	Hawaii	1, the moving of a gentle wind. 2, the name of a wind. mapu elsewhere signifies to whistle, to sigh, puff.
758	maraái	Tahiti	the southeast wind. cf. 746. Also maraámu.

759	marepe	Moriori	the east-northeast wind. cf. 715.
760	mataalepola	Samoa	the name of a wind.
761	matagi	Samoa	wind.
	matagi	Tonga	wind.
	matagi	Niuē	wind.
	matagi	Futuna	wind.
	matagi	Uvea	wind.
	matai	Tahiti	wind.
	makani	Hawaii	wind.
	matagi	Mangareva	wind.
	matagi	Mangaia	wind.
	matangi	Maori	wind.
	metaki	Marquesas	wind.
	tu-mtagi	Aniwa	wind.
	matagi	Paumotu	the air.
	cagi	Viti	wind.
	matani	Sikayana	wind.
	matagi	Rarotonga	wind.
	matagi	Manahiki	wind.
	matagi	Niuafoou	wind.
	matagi	Fakaafo	wind.
	lang	Rotumā	wind.
	nimtinjop	Aneiteum	wind.
	matagi	Niua	wind.
	matagi	Tanna	wind.
	nimetang	Eromango	wind.
	matagi	Vaté	wind.
	'nlang	Vaté	wind.
	iengo	Nengone	wind.
	enth	Lifu	wind
	kuīe	New Caledonia	wind.
	kuttow	Ebon	wind.
	buran	Moreton Bay	wind.
	angin	Malay	wind.
			cf. 529, 563, 567, 618, 654, 672, 710, 783, 787, 799, 836, 850, 851, 869, 919, 922, 939, 1192.
762	matagita	Mangareva	wind turned in another direction by striking a point of land. ta, to hit.

763	matamatagi	Samoa	the wind's eye. mata, the eye, point of anything.
	matamatagi	Futuna	the wind's eye.
764	mataparapu	Tahiti	violent wind. cf. 823.
765	mataupolu	Samoa	an easterly wind. cf. 607.
766	mate	Samoa	to die away. mate, ubique, to die.
767	matematealiku	Tonga	a deceitful calm. matemate, becoming smooth; likulikumoao, changeable, unsettled.
768	mātū	Samoa	a northerly gale.
769	mauru	Maori	the northwest wind.
		Moriori	the southwest wind.
			cf. 61, 534, 560, 585, 586, 591, 644, 677, 840, 883, 891a, 936, 940–3.
770	mauu	Hawaii	refreshing, as a cool breeze. mau, dampness.
771	maununu	Hawaii	name of a sea breeze at Puuloa, Oahu.
772	mawake	Maori	the southeast wind.
		Moriori	the northeast wind.
			cf. 525, 726, 779, 884.
773	mehau	Tahiti	wind, breeze. cf. 310, 640, 641.
774	mehiti	Mangareva	to move to another point, to change.
775	meimatakura	Mangareva	a fresh breeze over a calm sea. cf. merinokura, a dead calm.
776	merinotuaapipi	Mangareva	a light breath of wind, a zephyr. cf. 754.
777	mihoorie	Tahiti	agreeable breeze.
778	mio	Mangareva	to die down.
779	moae	Hawaii	the northeast trade.
	moake	Mangareva	the east wind.
			cf. 525, 726, 772, 784, 884. Synonym 679.
780	moaeku	Hawaii	a wind from a foreign country.
781	moaelehua	Hawaii	the lehua breeze, the wind that shakes the lehua trees; also moanilehua.

782	moaepehu	Hawaii	the name of a wind. pehu, swollen.
783	moani	Hawaii	the name of a wind. cf. 529.
784	mooae	Hawaii	the north wind at Honolulu. cf. 779.
785	moolio	Hawaii	to breeze on one side. cf. 705.
786	mudre	Viti	a breeze; to blow gently.
787	mulimatagi	Samoa	the place where the wind ends. cf. 761, 763.
788	mumuhau	Maori	an eddy wind. cf. 583, 641.
789	mumuhu	Tahiti	the roar of the wind. mumuhu, to hum.
790	mumuku	Hawaii	a wind blowing over land between two mountains as if cut off from the main wind.
791	muri	Maori	a breeze. cf. 580, 707, 927.
	muritai	Maori	the sea breeze.
792	mutu	Mangareva	to drop, to leave off blowing.
793	muululu	Hawaii	name of a south wind at Honolulu. cf. 738. muumuu, to cut off; lulu, calm.
794	nae	Hawaii	1, the upper regions of the air. 2, the place whence the wind comes.
795	nahenahe	Hawaii	a gentle wind, stronger than aheahe (535), which is stronger than aniani (529, 555). cf. 704, 706, 832.
796	nahua	Hawaii	the name of a wind which often blows at Kaanapali. cf. 420.
797	naulu	Hawaii	name of the sea breeze at Waimea, Kauai. cf. 177, 423.
798	nŏanoa	Samoa	calm.
799	noe	Hawaii	name of the northeast trade at Lahaina from over the land. cf. 678.
800	nonoenoe	Hawaii	the northeast trades.
801	nou	Hawaii	to blow hard as a gale; a puff or blast of wind. cf. 1023.
802	nu	Hawaii	to roar. gu, Polynesia, to grunt, to growl.

803	ofaga	Samoa	to blow a fair wind. Compare tokaga, Tonga, a place where many birds lay their eggs, a point from which the wind blew.
804	okalakala	Hawaii	to be boisterous, raging. kala, rough.
805	okee	Hawaii	to turn around, to shift. kee, to bend.
806	olu	Hawaii	a cool breeze.
807	ona	Tahiti	a little breeze.
808	oniania	Tahiti	to spring up, of a breeze. cf. 924.
809	onini	Hawaii	to blow very softly as the beginning of a breeze which only ripples the sea after a calm. Synonym 839. niania, calm, as an unruffled sea cf. 924.
810	pa	Hawaii	to strike suddenly and heavily.
811	paa	Hawaii	to blow. cf. 561.
812	paeroa	Maori	a wind blowing along the shore.
813	pahengihengi	Maori	blowing gently. cf. 652.
814	pahili	Hawaii	to blow on different sides as a flickering wind. hili, to turn.
815	pailua	Hawaii	the name of a wind from Kamiloloa.
816	pakaielelu	Hawaii	a strong wind off Waianae.
817	palapu	Samoa	a wind from the land. cf. 620, 823.
818	palula	Hawaii	calm, in a lull of the wind. cf. 737.
819	paolo	Samoa	the name of a wind.
820	papape	Tahiti	a squall with rain.
821	papaukiuki	Hawaii	a very fierce strong wind. cf. 931.
822	paraki	Maori	a northerly wind.
	parakiraki	Paumotu	a northwest wind. cf. 723.
823	parapu	Mangareva	the northwest wind.
	parapu-pa-tiu		west-northwest.
	parapu-pa-tokorau		north-northwest. cf. 764, 817.

824	parera	Maori	the northwest wind.
825	patua	Tahiti	a gust of wind before rain.
826	pawhakarua	Maori	the northeast wind. cf. 632
827	peahi	Hawaii	a gentle fanning breeze. Synonym 695.
828	pi'ipapa	Samoa	a cold wind. pi'i, to stick to; papa, rock.
829	poahau	Moriori	a squall. cf. 641.
830	poho	Hawaii	to blow gently.
831	pohu	Hawaii	a calm after a storm. also pohuku.
832	polinahe	Hawaii	to blow softly, as a light breeze. cf. 704, 706, 795. poli, cf. 208, 835.
833	polua	Hawaii	a wind blowing from two directions. lua, two.
834	popoi	Hawaii	to come up suddenly, as a cold breeze.
	popoki	Maori	an eddy wind. also pokipoki. cf. 207.
835	pori	Mangareva	to rise. cf. 832.
836	porimatagi	Mangareva	a strong wind, a gale. cf. 761.
837	pororo	Mangareva	a sudden squall. cf. 568a, 867.
838	pounui	Maori	the south wind.
839	puaia	Hawaii	to blow gently; used on the island of Hawaii in the same sense as onini on Maui. Synonym 809. cf. 594.
840	puakaiaulu	Hawaii	a light gentle breeze, a dying breeze of the trade wind. ulu, cf. 61, 534, 560, 585, 586, 591, 644, 677, 769, 840, 883, 891a, 936, 940–3.
841	puaki	Moriori	the name of a certain wind.
842	puehu	Hawaii	a flurry of wind which stirs up dust and leaves. cf. 287a.
842a	puihauhau	Tahiti	to blow gently, as a small breeze. cf. 310, 640.
843	pukeri	Maori	to rush along violently, as a blustering wind. cf. 684.

843a	pukeru	Maori	to blow.
844	pukiki	Hawaii	to blow furiously, to be very stormy weather. kiki, intensive.
845	pukukalina	Hawaii	a small whirling wind that removes light things.
846	pulehu	Hawaii	a waterspout. lehu, ashes.
847	pulena	Hawaii	1, the name of the southeast wind at Hilo and Waimea. 2, softly blowing, as a gentle wind. cf. 859.
848	pulihi	Hawaii	a whirlwind.
849	pulou	Futuna	a wind which blows from the interior.
850	pumakani	Hawaii	to blow or rage as a hurricane. cf. 761.
851	pu matai	Tahiti	the wind's eye. cf. 761.
852	punonohuula	Hawaii	raising the dust, as a strong wind.
853	pupuhi	Hawaii	to blow violently.
	puhi	Mangareva	to blow.
	pupuhi	Maori	to blow.
	puhi	Tahiti	to blow.
	pupui·	Rarotonga	to blow.
	puhi	Marquesas	to blow.
	puhipuhi	Paumotu	to blow.
	ambusi	Malay	to blow.
854	purekereke	Maori	a puff of wind.
855	purerehu	Maori	a very violent squall. rere, to fly; hu, to buzz.
856	purorohau	Maori	a gust of wind. pu, to blow; roro, to rain with hissing, cf. 449, 867; hau, wind. cf. 640.
857	putaitufu	Samoa	the name of a wind at Tufu (Savai'i) only.
858	putongamarangai	Maori	the southeast wind. cf. 758, 908.
859	puulena	Hawaii	a cold wind on the mountains. cf. 703, 847.
860	rakiroa	Moriori	the west wind. cf. 49, 57, 723.
861	ranga	Maori	to blow quietly.

	lagi	Vatē	wind.
	lagi	Api (SE)	wind.
	lang	Pentecost	wind.
	lang	Ambrym	wind. cf. 579.
861a	ripoa	Tahiti	a whirlwind.
	ipoipo	Tagalog	a whirlwind. cf. 575.
862	rofai	Tahiti	a stroke of wind. cf. 455, 868.
863	rofaifai	Tahiti	a violent stroke of wind.
864	ropatahi	Tahiti	a blast of wind.
865	ropu	Maori	a gust of wind, a squall.
866	ropuee	Tahiti	a violent blast of wind.
867	roro	Viti	to begin to blow after a calm.
	roro	Mangareva	a squall, a sudden gust. cf. 449, 568a, 837, 856.
868	rorofai	Tahiti	a blast of wind. cf. 862.
869	rua matai	Tahiti	the direction whence the wind comes. cf. 761.
870	ruru	Viti	calm.
	vakaruruya	Viti	to moderate. cf. 738.
871	sălulu	Samoa	to blow uncertainly. cf. 738.
872	savili	Samoa	a breeze.
	savili	Futuna	to blow a breeze.
	savilivili	Futuna	a gentle breeze.
	havili	Uvea	the air; to blow. cf. 648.
873	sobusobu	Viti	a gust of wind from the mountains.
874	sulu	Samoa	a southwesterly wind.
875	tafailautolo	Samoa	a calm in the morning succeeded by wind. cf. 891.
876	tafue	Tonga	to blow strong and boisterous. cf. 621. fuea, to be driven to and fro by the wind.
877	tăfulu	Samoa	to blow boisterously.
878	taikura	Mangareva	a hurricane, tempest, where the sea is driven up over low lands.
879	taka	Tonga	to move, of the wind. cf. 51, 52, 98, 102, 120, 156, 214, 223, 463.
880	takatofu	Tonga	a light shifting wind. cf. 612, 904.

881	ta'uta'u	Samoa	a squall. cf. 914.
882	tamala	Samoa	to moderate. mala, soft.
883	tamauru	Maori	the southwest wind. cf. uru, 61, 534, 560, 586, 591, 644, 677, 769, 840, 891a, 936, 940–3.
884	tapararo	Maori	the north wind. raro, the north. cf. 525, 726.
885	tapatoa	Tahiti	high wind at noon. toa, cf. 908.
886	taufa	Tonga	a squall. cf. 467.
887	taufaia	Tonga	squally.
888	taugātai	Futuna	wind which comes off the sea.
889	tauru	Maori	the west wind. cf. 883.
890	taufanua	Samoa	to be off the land. cf. 893.
891	tautafa	Samoa	a squall. cf. 875.
891a	tauru	Maori	the west wind. uru, cf. 61, 534, 560, 586, 591, 644, 677, 769, 840, 883, 936, 940–3.
892	tauvale	Samoa	to come ahead, as a foul wind.
893	tawhenua	Maori	a land wind. cf. 890.
894	tinoimatagi	Samoa	a strong breeze. tino, cf. 342, 501, 515.
895	tioraraga	Mangareva	shifting. tiora, distracted; raga, cf. 861.
896	tirivara	Tahiti	a hurricane.
897	titoatara	Mangareva	wavering, inconstant.
898	titoke-titoke	Mangareva	wavering, inconstant, shifting.
899	tonga-tauwhare	Maori	a south wind with warm weather. tauwhare, to overhang. cf. 908.
900	tiu	Mangareva	the west wind.
	tiu	Marquesas	the north wind.
	tiu	Moriori	the northwest wind.
	fa'atiu	Samoa	a northerly wind.
	kiu	Hawaii	a northwest wind. cf. 581, 610, 693, 711, 925, 643, 930, 940.
901	toahuri	Tahiti	a violent wind. toa, cf. 582; huri, cf. 539, 627, 667, 669, 952.

902	toahuripapa	Tahiti	a hurricane. papa, rock.
903	toaraa	Tahiti	the south wind.
904	tofu	Tonga	calm.
	tofu	Futuna	calm, of the sea. cf. 612, 880.
905	tofuki	Tonga	a dead calm.
906	tofutofu	Tonga	nearly calm, light winds. cf. 614.
907	tofutofukaehiko	Tonga	a deceitful calm. tofu, calm; kae, but; hiko, to blow as in a hurricane. cf. 613, 653.
908	toga	Samoa	the south wind.
	toga	Futuna	the south wind.
	toga	Uvea	the south wind.
	toga	Mangareva	the south wind.
	tonga	Maori	the south wind; biting cold; snow.
	tonga-kotaratara		the southwest wind.
	tonga-ma-uru		the southwest wind.
	toa	Tahiti	the south wind.
	kona	Hawaii	the south wind; southwest wind.
	tuatoka	Marquesas	east; southeast; south.
	toga	Mangareva	the south wind.
	toga	Paumotu	the south.
	tongariro	Moriori	the southeast wind.
	tongawaikau	Moriori	southeast by south wind.
	natoga	Aneiteum	the east wind. cf. 368, 586, 708, 858, 885, 899, 1187.
908a	tohau	Marquesas	a gentle wind. cf. 641.
909	to'elau	Samoa	the southeast trade.
	tokalau	Viti	the east wind.
	tokalaulutu		north or northeast.
	tokalauvualiku		north or northwest.
	tokelau	Futuna	the north wind.
	toerau	Tahiti	west or northwest.
	tokelau	Niuē	north.
	tokerau	Maori	eastern.
	koolau	Hawaii	east.
	tokelau	Tonga	north.

	apatoerau	Tonga	south.
	tokerau	Mangaia	the northwest wind.
	tokorau	Mangareva	north.
	tokorau	Moriori	the name of a wind, of uncertain application.
	tokerau	Paumotu	north.
	patokerau		northeast.
	tokoau	Marquesas	north, northeast.
	natokarau	Aneiteum	the northwest wind. cf. 236.
909a	to'elaulafalafa	Samoa	a variety of the trade wind. cf. 720, 721.
910	tokihi-kiwi	Maori	the cold wind of battle, an omen felt the night before bloodshed.
911	tokitoki	Maori	very calm. cf. 1217.
912	tolona	Tonga	to move off in another direction, as a squall. compare malona, to die away, to subside, to sink.
913	topu'epu'e	Samoa	to come in puffs. puke, to begin to rise, to heap up.
914	tota'uta'u	Samoa	to blow in sudden gusts.
	totakutaku	Tonga	to blow in gusts strong and sudden. cf. 881.
915	totokalihi	Tonga	a dead calm.
916	totai	Tonga	a head wind.
917	tougaruru	Mangareva	to diminish slightly in force. uga, little pieces; ruru. cf. 738.
918	tove	Mangareva	rain that continues for twenty-four hours without intermission.
919	tuamatagi	Mangareva	in the mouth of the wind, said of an unsheltered place. tua, the back; matagi, 761.
920	tuaoloa	Samoa	a southeasterly wind.
921	tuaraki	Maori	the north wind. cf. 723.
922	tuatalamatagi	Tonga	one forward with his opinion of the wind though among sailors. tuatala, to talk overmuch. cf. 761.
923	tukauati	Maori	a whirlwind. kauati, a stick used in making fire.
924	tuoni	Tonga	a gust of wind. oni, Maori, to jerk; cf. 808, 809.

925 tupatiu — Maori — the northwest wind. cf. 581, 900.
926 tupuhi — Maori — a gale, tempest; windy. cf. 853.
927 tutuamuri — Tahiti — a pleasant east wind. cf. 791.
928 uafa'afoga'upolu — Samoa — an east wind. cf. 607.
929 uihi — Tahiti — a breeze.
930 ukiu — Hawaii — a north wind. cf. 693, 900.
931 ukiuki — Hawaii — a strong wind, next weaker than malanai. cf. 821.
932 uluaunui — Hawaii — a rainy north wind at Hilo.
933 ulumano — Hawaii — a violent wind blowing in the night only from the south on the west coast of Hawaii.
934 umihau — Hawaii — a strong east wind that blows all before it. umi, to strangle; hau, cf. 641.
935 ununu — Hawaii — the name of a sea breeze at Puuloa.
936 uru — Mangareva — the southwest wind.
uru — Maori — the west.
uru — Moriori — the southwest wind. cf. 61, 534, 560, 585, 586, 591, 644, 677, 769, 840, 883, 891a, 940, 941, 942, 943.
937 uruhanga — Maori — a sudden blast commencing a southerly wind.
938 urumaraki — Maori — a sudden gust of wind. cf. 723.
939 urumatai — Tahiti — a violent blast of wind. cf. 761.
939a urupa — Tahiti — a violent blast of wind. cf. 554.
940 urupatiu — Mangareva — the wind at west a quarter south. cf. 581, 900.
941 urupatoga — Mangareva — the wind at south a quarter west. cf. 585.
942 ururoa — Moriori — the southwest wind.
943 urutonga — Mangaia — the west wind. cf. 585.
944 ùùlu — Futuna — the sound of the wind.
945 vainu'u — Samoa — a northeasterly wind. va, between; nu'u, lands.
946 vakalukalu — Viti — to whistle, the noise of the wind.

947	vakawaitāvikoviko	Viti	a puff of wind coming from a point opposite the wind, an eddy, whirlwind.
948	vākotokoto	Viti	to lull and then blow again.
949	vava	Tahiti	the sound of wind and rain. cf. 521.
950	veiliwayaki	Viti	to shift.
951	veli	Samoa	the east wind (Tutuila only).
952	verohuri	Tahiti	a violent tempest. vero, a storm, cf. 264, 470, 1221; huri, to overturn, cf. 901.
953	vualiku	Viti	the north wind. cf. 909.
954	vuraba	Viti	to grow stronger.
955	waakoihi	Hawaii	a waterspout.
956	waipau	Hawaii	the land breeze at Waimea, Kauai.
957	waipuilani	Hawaii	a waterspout. wai, water; pui, to force; lani, heaven.
958	whakapakihi	Maori	the northeast wind. cf. 189.
959	wilikoi	Hawaii	the substances that are taken up the center of a whirlwind. wili, cf. 112, 732.

TEMPERATURE

Hitherto in the previous sections of this inquiry we have enjoyed the assistance of abundant historical material, and it has led us to a cloud of fable comprehensible only as we may sense the social psychology of man of a primitive type. We are now to advance upon the consideration of one of the meteorological elements in which we shall find no assistance whatever from history as held in the traditions, yet where we shall find ourselves led to a vision of ancient history which shall go far to establish at least one fact in the story of ancient Polynesian migration, or rather to establish a fixed condition which shall characterize all other stray facts discoverable.

It is not hard to see in what working of the intelligence the Polynesian has recognized an anthropophysical character of the clouds; on a much more lofty culture plane the chorus clouds of Aristophanes jarred not at all upon the delicate Attic wit. So

too it is not difficult to appreciate how the rains may be invested with human, therefore divine, attributes. We have already commented upon the ease with which the same line of concept has been extended to the winds. But it is all in vain that we search the old Samoan genealogies to find any suggestion of the anthropophysical in the constants of atmospheric temperature; heat and cold, frost and snow, have not struck the Polynesian intelligence as sufficiently individual to shape themselves into human guise or nature to serve as ancestors. Just why such a distinction should obtain we may never discover; this, at least, is not the place in which to pursue a research so essentially psychologic. It is enough to record the fact.

Atmospheric cold is to be reached by latitude or by altitude.

Normally the bulk of the Polynesian race lies within the tropics on islands of but moderate elevation and bathed forever in an unchanging summer sea. The Maoris alone have pushed out into the higher latitudes far enough to come within the seasonal colds of the temperate zone, the Hawaiians alone inhabit a land where within the torrid zone it is possible to attain unto the frost of altitude. The typical life of Polynesia is passed in a high temperature whose isotherms from day to night and from month to month are of the flattest known.

Apia, lying in 13° 49′ S. may be taken as typical of torrid Polynesia, and for that station Dr Funk has kept for many years a valuable series of meteorological records. The mean annual temperature is 78.2° F.; the mean maximum, in February, is 89.8° F.; the mean minimum, in August, is 64.4° F.

Bearing in the mind these constants we shall find it not unfruitful to examine the significations of the dialectic forms and senses of the words entered in this record under *mahana* 1007.

So far as concerns the weather *mahana* signifies warm, warmth up to the hottest day's temperature. But we may find associated with it a tropical signification which is not without its bearing on the story of this interesting race. In the Samoan *mafana*, warm, becomes through the causative verb element *fa'amafanafana* to encourage, to cheer up, to comfort. In the Tongan *fakamafana* signifies to encourage when joined with

fatu the heart, to warm the heart. In the Tahitian the stem carries so much warmth that *mahana* is the sun, yet still the causative *haamahana* signifies to warm and comfort a person. In the Paumotus, where the underlying root *hana* is the sun as the hot one, we are not surprised to find *hakamahanahana* signifying to console. But strangely enough when we turn to the languages of the two divisions of the Polynesian people to whom sharp cold is familiar we no longer find this tropical sense of *mahana;* in Hawaii and in Maori *mahana* means no more than warm, yet in the one case the eye may rest upon the ever-living snow cap of Mauna Kea, and in the other the snowy mountains and the rigors of a Dunedin winter are so many reminders that frost is well known. A similar line of thought may be discerned in following out the various uses of the word for cold, *ma'alili.* These observations we may sum in the statement that in tropical Polynesia to warm is to comfort, to cool is to discourage.

Now in all tropical Polynesia fire and comfort are incompatibles. Fires there are to heat the ovens wherein are baked the meals, but these are carefully made far away from the habitations of men. In every house a tiny fire flickers through the hours from dusk to dawn when evil spirits flit abroad, but such fires are a mere spark in a husk of coconut, ceremonial, prophylactic in a simple faith. In no way could it enter into the mind of Samoan or Tongan or Tahitian to kindle the residue of his god and say "Aha, I am warm, I have seen the fire." None the less to warm is to comfort in islands where the temperature rarely goes under 70.

There is but one explanation possible. So far as the backward of the known Polynesian migration into these seas can be traced from their records upon our charts we are led closer and closer to the equator, nearer and nearer to yet greater warmth. But behind the warmth, in a track of migration wherein we have no sure tradition to guide us in orienting the early steps of the prehistoric fathers of this race we are led unerringly to some land where the warmth of a fire gave them comfort, some land of keen and eager air, some land where the climate was

far different from the climate of the heated islands on which we now find the race established. Whether the cold their ancestors knew was the frost of altitude or the low temperature of latitude we perhaps may never have the data to determine. Percy Smith from a keen examination of one of the old race names, Avaiki-te-Varinga, has pronounced them an ancient Gangetic people. This may well be the case, yet so long as warmth and comfort are the same word on Polynesian tongues we may be pardoned for looking upon the sun-baked valley of India's holy river as but a halting place, not the home land. Along independent lines of research Tregear has been led to a cradle of the race in the spurs of the Hindu-Kush. That is a theory which will fit in well with this *mahana* revelation of the past, yet it may not accord so well with other lines of investigation. So far as concerns the present paper we may rest upon the statement that any nursery of the first Polynesians in their distant and infant estate must be identified as a land whose temperature at times must fall so low that the heat of the fire must prove grateful to man, that the comfort of the chilled body must be so marked as to provide the name for the comfort of the soul. This must have been so marked by climatic contrast and continued over such a long period of time that the swarming race had of necessity to carry the idea and the words with them to the blazing equator and their new homes which dot the warm seas.

We have already mentioned that the isotherms of the Pacific islands are flat. A result thereof we shall see in the comparative paucity of heat words in the following list and the jejunity of their signification as compared with the atmospheric constants already passed under examination.

960	afugia	Tonga	to feel oppressed with heat. afu hot; afu, Futuna, hot, of food. cf. 1158, 971.
961	ahuahu	Tahiti	excessive heat.
962	anaana	Mangareva	suffocating heat. cf. 1033.
963	anu	Tahiti	cold.
	anu	Hawaii	cold.

	anu	Mangareva	cold.
	anu	Maori	cold.
	anuanu	Maori	cold, chilly air, vapor, mist. cf. 670, 1030, 1037.
964	anuanutanga	Maori	the cold season.
965	anumatao	Maori	cold air, cold vapor. matao, cold, 1012.
966	anumate	Maori	very cold and damp air; a deity, the source of death. mate, dead.
967	anupouri	Maori	cold air at night. po, night; uri, black.
968	anuwhakarere	Maori	very cold air. whakarere, to cast away.
969	anuwhakatoro	Maori	increasing cold airs. whakatoro, to spread.
970	buhegia	Tonga	to be suffocated with heat.
	pusa	Samoa	to be hot.
	pusa	Futuna	to be hot. cf. 972.
971	fakaaafu	Tonga	to heat, as sultry weather. cf. 1158.
972	fakabubuha	Tonga	hot, sultry. cf. 970.
973	fakalifulifu	Tonga	to shudder with cold.
	lifulifumakalili	Futuna	to shudder with cold.
974	fa'ama'alili	Samoa	to be chilly. cf. 1010.
975	fa'asagiti	Samoa	to be chilly.
976	gehegehe	Tonga	cool, when the sun is some time past noon.
977	hahana	Hawaii	very warm. cf. 558, 996, 1008.
977a	hahau	Niuē	cool.
978	haoa	Hawaii	the fierce burning heat of summer.
979	hauaitu	Maori	starved with cold. hau, cf. 640; aitu, calamity.
980	hauangi	Maori	cool. hau, cf. 640; angi, cf. 529.
980a	hauhau	Niuē	cool.
981	hookoekoe	Hawaii	to be cold and wet. cf. 997.
982	hoto, hotoke	Maori	cold.
	toketoke	Tahiti	cold.

	huitoetoe		cold.
	motoe		cold.
	putoetoe		cold.
	fakatoketoke	Paumotu	to chill.
	toketekete		cold.
	koekoe	Hawaii	to be wet and cold.
	mokoi	Tonga	cold.
	mokoia	Futuna	cold. cf. 1013, 1015, 1181.
983	huhuluii	Hawaii	wet and cold. huhulu, hair; ii, to stand up as mold.
984	hui	Hawaii	chilly, as morning air from the mountain.
	huiki	Maori	pinched with cold.
985	hukeki	Hawaii	cold.
986	hukiki	Hawaii	wet and cold.
987	hulili	Hawaii	wet and cold. cf. 1010.
988	jijijiga	Tonga	noonday vertical heat.
	titili	Samoa	the sun darting its rays.
989	ʻaʻasa	Samoa	to be glowing hot.
	kakaha	Tonga	hot.
990	ʻaʻava	Samoa	to be scorching hot. Compare kakava, Tonga, perspiration.
991	ʻavaʻava	Samoa	to be oppressively hot.
992	kawau	Hawaii	wet and cold.
993	kehau	Hawaii	frosty. cf. 640.
994	kimo	Tonga	the glare of the sun in very hot weather.
995	koehaeha	Hawaii	hot, sultry and uncomfortable.
996	koehana	Hawaii	warm. cf. 558, 977, 1008.
997	koekoe	Hawaii	wet and cold. cf. 981, 982.
998	kohea	Hawaii	a warm day, pleasant, agreeable weather.
999	konui	Hawaii	to be very hot.
1000	kuete	Mangareva	to shiver with cold. cf. 1002.
1001	kukuni	Hawaii	very hot. kuni, to kindle.
1002	kutete	Mangareva	to shiver with cold. cf. 1000.
1003	la	Samoa	to be intensely hot.
	laa	Tonga	intense heat from the sun.
	laalaa		droughty, wanting rain.
	laa	Futuna	drought.

	la	Hawaii	warm.
1004	lalilali	Hawaii	wet and cold.
1005	maanuanu	Tahiti	cold. cf. 963.
1006	maeke	Maori	cold. cf. 1028.
1007	mahana	Hawaii	to become warm, as the rising sun.
	mahana	Tahiti	the sun.
	mahana ioio		a bright, hot day.
	mahana paaroto		a hot day.
	mahana toaho		a stifling day without a breeze.
	mahana	Mangareva	heat.
	maana		heat.
	kahana		heat.
	mahana	Nukuoro	hot.
	mahana	Maori	warm.
	mafana	Samoa	hot.
	mafana	Niuē	warm weather, the summer.
	mafana	Tonga	warm.
	mafana	Futuna	heat.
	hana	Paumotu	the sun.
	fána	Malagasy	hot.
	mafana		warm.
	panas	Java	warm.
	panas	Malay	hot.
	mahana	Brumer Is.	the sun.
	mahana	Dufaure Is.	the sun.
	mafana	Sikayana	warm.
	manah	Kisa	hot.
	pana	Bima	hot.
	bana	Wayapo	hot.
1008	mahanahana	Tahiti	hot. cf. 558, 977.
1009	mahau	Maori	cool, shady.
1010	ma'alili	Samoa	cold.
	liliwa	Viti	cold.
	makalili	Futuna	cold.
	maariri	Tahiti	cold.
	makariri	Marquesas	cold.
	makanini	Nukuoro	cold.
	makariri	Maori	frost, cold, winter.
	kamaii	Marquesas	cold.

mukaligi	Aniwa	cold.
makariri	Paumotu	cold.
makaechi	Uvea	cold.
makalili	Sikayana	cold.
makariki	Ahtiago	cold.
periki	Lariki	cold.
dabridí	Massaratty	cold.
aridin	Matabello	cold.
mamarir	Mota	cold.
makariri	Manahiki	cold.
makalili	Niuē	cold.
makalili	Fakaafo	cold.
matit	Rotumā	cold.
makaringi	Niua	cold.
makariri	Vaté	cold (Turner).

The following words signify cold in languages immediately adjacent to Polynesian territory: Tanna, aukuie; Erromanga, nitepont; Vaté, melanr; Lifu, not; New Caledonia, mure; Ebon, ebeow; Moreton Bay, tantan; Malay, dingin; Java, a'dam; Bouton, magári; Salayer, dingin; Menado, madadum; Bolanghitano, motimpia; Sanguir, matuno; Sulu, bagoa; Cajeli, numniri; Mayapo, damoti; Amblaw, komoriti; Tidore, góga; Gani, makufin; Galela, damala; Liang, periki; Morella, periki; Batumerah, muti; Saparua, puriki; Awaiya pepéta; Caimarian, mariki; Teluti, pilikeko; Tobo, baidik; Gah, lifie; Wahai, mariri; Matabello, aridin; Teor, giridin; Mysot, kabluji, patoh; Baju, jernih; Port Moresby, neru; Malagasy, hatsiaka, malaina; Nengone, leulebue; Anaiteum, idoido; Fate, milate; Sesake, maladi; Api, manini; Ambrym, mala; Espiritu Santo, narir; Whitsuntide, masisi; Lepers' Island, madidi; Aurora, madiding; Meralava, mamarir; Gog, mamerir; Lakon, mising; Pak, mamgit; Sasar, manwit; Vureas, mamegin; Mosina, mamegin; Alo Teqel, mamgit; Motlav, momrir; Volow, mamrir; Ureparapara, mamedin; Torres Islands, melehih; Santa Cruz, abao; Nifilole, balelo; Ulawa, wawai; Wango, wanusi; Fagani, magauga; Saa, wawai; Bululaha, wowai; Alite, guaguari; Vaturanga, bisi; Florida, bihi; Savo, gaule; Bugotu, gaula; Ngao, luuna; New Georgia, gamu; Duke of York, madarig; Murray Island, gebgeb; Motu, kerukeru.

1011	makausu	Viti	hot, oppressive, close.
1012	matao	Maori	cold; also kutao. cf. 965.
1013	matoke	Maori	cold. cf. 982.
1014	matomato	Maori	cool.
1015	mokoi	Tahiti	cold. cf. 982.
1016	mokojia	Tahiti	cold.
1017	mokomoko	Tonga	cool.
	fakamokomoko	Futuna	cold; mokoia, momoko.
1018	mokomokoaho	Tonga	the cold about daybreak; aho, day.
1019	momoko	Tonga	cold.
	momoko	Futuna	cold.
	momoko	Uvea	cold.
1020	momokoetilo	Tonga	cold as death.
1021	momokoii	Tonga	cold as ice.
1022	mutitini	Samoa	to be fiercely hot.
1023	nou	Hawaii	to be very hot.
1024	ogo	Samoa	scorching.
1025	oveo	Mangareva	intense cold.
1026	paora	Mangareva	warmth, noontide heat. pao, to beat; ra, the sun.
1027	papala	Hawaii	the hot and dry season.
1028	pieke	Maori	cold. cf. 1006.
1029	puangiangi	Maori	cool. cf. 529.
1030	puanuanu	Hawaii	cold, chilly.
	puanu	Maori	cool.
	puhanuhanu	Moriori	cool. cf. 963.
1031	pukaka	Maori	hot.
		Rarotonga	heat. ka, to light a fire; kaka, red hot.
1032	puwera	Maori	warm. vela, cf. 62, 557, 1041, 1042.
1033	raanaana	Mangareva	a day when the sun is fiercely hot. cf. 962.
1034	ratutututu	Mangareva	a burning sun, the herald of rain. ra, the sun; tutu, a torch. cf. 1040.
1035	ririka	Paumotu	chilly.
	lia	Hawaii	cold.
1036	tailoilo	Tonga	cold.

1037	tauanuanu	Tahiti	the cold season.
1038	tikaka	Maori	hot. cf. 1031.
1039	tòdra	Viti	to be very hot.
1040	tutututu	Mangareva	to be very warm. cf. 1034.
1041	velaua	Futuna	stifling heat which heralds the rain.
1042	vevela	Samoa	hot. cf. 62, 557, 1032, 1041.
	vevela	Niuē	warm, hot.
	velavela	Tonga	hot.
	vera	Nukuoro	hot.
	werawera	Maori	hot.
	veravera	Tahiti	hot.
	wela	Hawaii	hot.
	vea	Marquesas	hot.
	vera	Mangareva	hot.
	veravera	Paumotu	hot.
	pelah	Mysot	hot.
	vevela	Manahiki	hot.
	vevela	Fakaafo	hot.

Other heat words, including several associated with mahana stems, are these: Rotumā, pumahan; Aneiteum, niklup; Niua, kauakaua; Tanna, apanapan; Erromanga, nouou; Vaté, kava; Vaté, fetin; Nengone, cheuchawa; Lifu, zinu; New Caledonia, mere; Ebon, ebmil; Moreton Bay, urun; Malay, kapānasān; Java, panas; Bouton, mopani; Salayer, bumbung; Menado, matéti; Bolanghitano, mopaso; Sanguir, matúti; Sulu, baháha; Cajeli, poton; Mayapo, dapóto; Massaratty, dapótoni; Amblaw, umpána; Tidore, sasahu; Gani, san; Galelea, dasaho; Liang, putu; Morella, loto; Batumerah, aputu; Lariko, putu; Saparua, kuno; Awaiya, maouso; Caimarian, putu; Teluti, putu; Tobo, bafánat; Ahtiago, asála; Gah, mofanas; Wahai, mulai; Matabello, ahuan; Teor, horip; Mysot, benis; Baju, panas; Port Moresby, ciāhu; Malagasy, hafanana; Nengone, shodrone; Aneiteum, ehri; Fate, futunu; Sesake, dorodoro; Api, pisusunu; Espiritu Santo, tutunu; Whitsuntide, aruaru; Lepers Island, mamavi; Aurora, raragai; Meralava, sawsaw; Gog, tutun; Lakon, tutun; Pak, vavat; Sasar, i'in; Vureas, tutun; Mosina, tutun; Alo Teqel, i'in; Mota, tutun; Motlav, seuseu; Volow, sousou; Ureparapara, seseu; Lo, tun; Rotumā, sunu; Santa Cruz, luepu; Nifilole, vepe; Ulawa, matoro; Wango, raurau; Fagani,

raurau ; Saa, madoro ; Bululaha, matoro ; Alite, ranga ; Vaturanga, papara ; Florida, papara ; Savo, parapara ; Bugotu, papara ; Ngao, jalatoga ; Duke of York, uan ; Murray Island, ureuri ; Motu, siahu.

1043 yakaliwa Viti very cold. cf. 1010.

Optical Meteorology

Here we find the divorce of the weather and the man a complete one. To be sure, even in Mid Polynesia the rainbows and the haloes are looked upon as divine, but they are gods of a minor importance, gods not worthy to be taken into the list of the progenitors of men so proud that they record god supreme as of the cadet branch of their house. We shall hurry on, then, to the list of words descriptive of this branch of weather lore, stopping briefly to note Turner's record of La'amaomao. "This is one of the names of the rainbow, which was a representative of a war god of several villages. If, when going to battle, a rainbow sprang up right before them and across the path, or across the course of the canoes at sea, the troops and the fleet would return. The same if the rainbow arch, or long step, of the god was seen behind them. If however it was sideways they went on with spirit, thinking the god was marching along with them and encouraging them to advance."[1] This divination by polarization was quite common, in fact remains so. It is by no means restricted to the rainbow, a rail running across the road, a lizard scuttling athwart the path, even an old and upturned coconut basket, provided its major axis cuts the way — all these yet avail to interfere with the orderly course of the concerns of life.

1044 āhĕahĕa Maori a vanishing rainbow, an omen of battle. cf. maheahea, to fade, to turn pale.

1045 aheihei Maori a rainbow. also puaheihei.

1046 aniwaniwa Maori a rainbow.

aniniwa Moriori a rainbow. cf. 10, 556.

[1] G. Turner, *Samoa*, chap. IV, p. 35.

1047 aokoro	Maori	a halo around the moon. ao, cf. 12 ; koro, a loop, a noose, cf. 1070a, 1087.
1048 arohirohi	Maori	the quivering of hot atmosphere. alohi, Hawaii, to shine, to reflect brightness.
1049 awheo	Maori	a halo, a large circle of fine scud around the moon, with the Maoris a prediction of bad weather.
awheotau		to be encircled with a halo. awhe, to surround.
1050 drò drò lagi	Viti	a rainbow.
1051 haere	Maori	a spirit residing in fragmentray rainbows or detached clouds. cf. 1081.
1051a hegahega	Niuē	the red light or rays at sunset.
1052 hinekorako	Maori	a spirit residing in lunar rainbows. hine, a girl ; korako, albino.
1052a hokohoko	Niuē	rays of the setting sun.
1053 holoholoke	Hawaii	to rest upon, as the ends of the rainbow.
1054 hualala	Hawaii	evenly arched, of the rainbow.
1055 īa	Marshalls	a rainbow.
jemäliwut		a complete rainbow.
lemmaru		a quarter of a rainbow.
nemajañ		a rainbow in a rain at high water.
ājūlobarinwá		a rainbow in the west.
lökortäñ		a piece of a rainbow.
1056 inatore	Maori	the will o' the wisp.
1057 īsă	Saipan	a rainbow.
1058 kahukura	Maori	1, the god of the rainbow. 2, a rainbow with a small arch appearing near at hand. kahu, cf. 502 ; kura, cf. 1082.
1058a kavekave	Niuē	rays of the setting sun.
1059 kolii	Hawaii	the quivering of the air on a hot day.

1060	koolili	Hawaii	the quivering of the air on a still hot day.
1061	kuleleula	Hawaii	bending, arching, as the rainbow.
1062	lihi	Hawaii	the rainbow, the bending of the rainbow arch upward.
1063	li'ofigota	Samoa	a halo around the moon. li'o, a circle.
1064	luahoana	Hawaii	a halo around the sun or moon.
1065	luakalai	Hawaii	a halo around the sun or moon.
1066	napa	Hawaii	to quiver as heated air.
1066a	nikoa	Niuē	a halo.
1067	nuanua	Samoa	the rainbow. cf. 11.
	nuanua	Futuna	the rainbow.
	nuanua	Uvea	the rainbow.
	anuanua	Tahiti	the rainbow.
	aranuanua		the rainbow.
	tapeanuanua		a part of a rainbow.
	anuenue	Hawaii	the rainbow.
	anuanua		the rainbow.
	anuanua	Mangareva	the rainbow.
	anuanua	Nukuoro	the rainbow.
	anuanua	Maori	the rainbow.
	aniwaniwa		the rainbow. cf. 1046.
	fanuanua	Paumotu	the rainbow.
1068	ohio	Hawaii	the undulating motion of the air over a smooth plain on a hot day. cf. 656.
1069	parearohi	Maori	quivering heat. cf. 1048.
1070	piao	Hawaii	the hot reflection of the sun on dry land.
1070a	pukoro	Maori	a halo around the moon. cf. 1047, 1087.
1071	rirerire	Maori	a mirage.
1072	rogo	Mangareva	the rainbow.
1073	sila	Samoa	an end of the rainbow.
1074	silata'imatagi	Samoa	the sila which brings or indicates wind. Also silamatagi.
1075	tagaloa	Niuē	the rainbow.
1076	takaniko	Tonga	circles around the moon. taka to go about; niko, to tie.

1077	takatakaniko	Tonga	a circle around the moon.
1078	tapii	Tahiti	a circle around the moon.
1079	taputea	Tahiti	the rainbow.
1080	tihae	Tahiti	a part of a rainbow.
1081	Tohaereroa	Maori	a name of Kahukura, the rainbow god. cf. 1051.
1082	tohuura	Tahiti	a part of a rainbow. cf. 1058.
1083	uenuku	Maori	the rainbow.
1084	ulili	Hawaii	to exhibit the tremulous air over a hot surface. cf. 1060
1085	ulima'o	Samoa	an incomplete rainbow, representative of the god of Atua.
1086	umata	Tonga	the rainbow.
1087	virikoro	Viti	a halo around the moon. cf. 1047, 1070a.

Electrical Meteorology

1088	ahorohoro	Tahiti	a clap of thunder.
1089	aina	Hawaii	the report of thunder.
1090	anaanapu	Hawaii	to flash, of lightning.
1091	anapa	Tahiti	lightning.
	anapa	Hawaii	to flash. cf. 1118.
1092	anapu	Hawaii	to send forth lightning.
1093	atauira	Maori	moderate summer lightning. ata, reflection; uira, cf. 1157.
1094	atutiri	Mangareva	thunder. cf. 334, 402, 433, 1097.
1095	calidi	Viti	to crash, thunder. cf. 1129, 1098.
1096	erueru	Mangareva	the noise of thunder.
1097	faititili	Samoa	thunder.
	faijijili	'Tonga	a thunderbolt.
	haturi	Nukuoro	thunder.
	watitiri	Bukabuka	thunder.
	hatitiri	Tongarewa	thunder.
	whaitiri	Maori	thunder.
	whatitiri		thunder.
	patiri	Tahiti	thunder.
	hekili	Hawaii	thunder.
	hatiitii	Marquesas	thunder.

	atutiri	Mangareva	thunder.
	faititiri	Paumotu	thunder.
	faititiri	Manahiki	thunder.
	faititili	Fakaafo	thunder.
	vatshiri	Vatē	thunder.
	titir	Malay	to make a noise, a noise which gives alarm. cf. 334, 402, 1094, 1109, 1141, 1143.
1098	fakafatuliji	Tonga	to thunder heavily and in quick succession. cf. 1095, 1129.
1099	fatuliji	Tonga	to thunder in heavy and repeated claps.
	fatuliki	Uvea	thunder.
	lidi	Viti	the report of thunder.
1100	feajiaji	Tonga	to shoot from different directions, of lightning; reciprocal of aji, to pierce. cf. 1113.
1101	fehilaaki	Tonga	to glare from opposite directions, of lightning; reciprocal of hila, to look askant.
1102	fetapalaki	Futuna	lightnings which flash from all sides almost at once. cf. 1154.
1103	gahaehaeatoga	Mangareva	a dreadful noise as of loud thunder. gahae, the noise of tearing.
1104	gere	Mangareva	the sound of sustained rumbling peals of thunder.
1105	gūgūlu	Futuna	rolling sound of thunder.

Of the same signification are these: Malagasy, gourouroukă, kouroukă; Java, gourouh; Sunda, gourouh; Malay, gourouh; Batak, gôra; Dayak, gourak; Macassar, gountourou; Bugis, goutou; Tagalog, kolog. cf. 630, 702, 1127, 1147, 1150.

1106	hakui	Hawaii	to sound in every direction as thunder rumbling through the heavens. kui, to sound out. cf. 1126.
1107	haruru	Tahiti	the sound of thunder. cf. 1108, 1112.
1108	heheruru	Mangareva	the detonation of thunder. cf. 1107.

1109	hekili	Hawaii	to thunder. hookehili. cf. 1097.
1110	hiko	Maori	distant lightning. hiko, to glare.
1111	hila	Uvea	to thunder. cf. 1157.
1112	halulu	Hawaii	the sound of heavy thunder or wind. cf. 1107, 1108.
1113	huki	Mangareva	to pierce through, to show, said of lightning flashes. cf. 1100.
1114	hūlō, i hīlō	Saipan	thunder.
1115	jörom	Marshalls	lightning.
1116	jôrur	Marshalls	thunder.
1117	kákárátárátá	Viti	to rattle, said of thunder. cf. 1136.
1118	kanapu	Maori	lightning.
	anapu	Hawaii	lightning.
	kanapa	Paumotu	lightning. cf. 1091.
1119	kani	Hawaii	to rumble, said of thunder.
1119a	kapa	Niuē	to flash.
1120	kapo	Maori	lightning.
1121	ʻemo	Samoa	to flash, lightning.
	kemo	Futuna	to flash.
	amo	Tahiti	to flash.
1122	kohara	Maori	to dart lightning, said of a deity. cf. 1124.
1123	kolokolo	Hawaii	the loud rumbling at the close of a peal of thunder.
1124	kowha	Maori	summer lightning. cf. 1122.
1125	kowhakiwhaki	Maori	summer lightning.
1126	kui	Hawaii	to sound, as thunder. cf. 1106.
1127	kuru	Viti	to thunder. cf. 630, 702, 1105, 1131.
1128	lámlam	Saipan	lightning.
	lumámlam		to flash.
1129	lidi	Viti	to crash, thunder. cf. 1095, 1098, 1152.
1129a	liva	Viti	lightning.
1130	mana	Tonga	thunder.
	mana	Futuna	thunder.
	mana	Uvea	thunder.
	mana	Sikayana	thunder.
1131	nakulu	Hawaii	the sharp sound of thunder. cf. 1127.

1132	nu	Hawaii	to sound like distant thunder.
1133	oaka	Hawaii	the flashing of lightning.
1134	olapa	Hawaii	to flash, as lightning. cf. 1145.
	oelappa	Macassar	to thunder.
1135	pā	Samoa	to peal, as thunder.
1136	pakaka	Futuna	the sound of thunder before the crash. cf. 1117.
1137	pakulagi	Niuē	thunder.
1138	paloo	Hawaii	thunder without rain.
1139	pamaloo	Hawaii	thunder without rain, especially if the weather is good.
1140	pātasi	Samoa	a single clap of thunder.
1141	patiri	Tahiti	thunder.
	patiri hoainia		thunder overhead.
	patiri tuiiraro		distant thunder. cf. 1097.
1142	poha	Hawaii	to burst suddenly, as thunder.
1143	pokuatutiri	Mangareva	a thunder clap. cf. 1097.
1144	polihiua	Hawaii	a flash of lightning.
1145	raparapa	Maori	to flash. cf. 1134.
1146	rataratakina	Mangareva	a clap of thunder. cf. 1117.
1147	sagulu	Futuna	rolling sound of thunder. cf. 1105.
	sagulupakupaku		rumbling thunder without rain.
1148	se	Viti	a thunderbolt, to crash.
1149	seasea	Viti	to strike an object, said of the thunder.
1150	tăgulu	Samoa	the sound of distant thunder. cf. 1105.
1151	Tairi	Mangareva	the god of thunder and of tempests.
1152	ta'alili	Samoa	to roll, as thunder. cf. 1095, 1098, 1129.
1153	ta'atulalo	Samoa	to rumble, as thunder.
1154	tapa	Futuna	the reflected light of lightning. cf. 1102.
1155	tibi	Viti	to flash as lightning.
1156	to'ia	Samoa	to be struck by thunder.
1157	uila	Samoa	lightning. cf. 1093, 1111.
	liva	Viti	lightning.
	uhila	Tonga	lightning.

uila	Futuna	lightning.
uhila	Uvea	lightning.
uira, uvira	Tahiti	lightning.
uila, uwila	Hawaii	lightning.
uira	Nukuoro	lightning.
uhila	Niuē	lightning.
uia	Marquesas	lightning.
rauira	Moriori	lightning.
uira	Mangaia	lightning.
uwila	Rarotonga	lightning.
uila	Manahiki	lightning.
uila	Fakaafo	lightning.

Other lightning words are these : Rotumā, mere ; Aneiteum, nawainapit ; Niua, vashiri ; Tanna, maruāpen ; Erromanga, turrepis ; Vaté, napila ; Nengone, uasisidin ; Lifu, sumek ; New Caledonia, iuea ; Ebon, charum ; Moreton Bay, balabiram ; Malagasy, helatră ; Java, kilat, chalirit ; Sunda, kilat, kilap ; Madura, kilap ; Malay, kilat ; Lampong, kilat ; Batak, kilap ; Dayak, kilat ; Macassar, kila ; Bugis, bila, ilă ; Tagalog, kirlat, kuirlat ; Visaya, kilat ; Sikayana, uila ; Kissa, uila ; Tidore, uila ; Pani, kuilat.

Climate in General

Under this heading are collected a small group of the words which for obvious reasons did not lend themselves readily to classification under any one of the preceding divisions.

1158	afua	Tonga	fair, dry, not raining or wet.
	afua	Uvea	fair weather.
	afua	Niuē	fine weather.
1159	afueina	Tonga	dry and pleasant weather during the performance of any work.
1160	ahiahi	Mangareva	a tempest.
1161	ahoahoa	Tahiti	stormy. cf. 539.
	afoafolagi	Niuē	signs of bad weather in the sky.
1162	aki	Maori	to beat, as a storm.
1163	alomalie	Tahiti	pleasant weather after rain. cf. 551, 605.
1164	alotamaki	Tahiti	heavy rain, bad weather.
1165	amaitanga	Maori	a tempest at sea. amai, to be stormy at sea.

1166	aoonohi	Hawaii	he aoonohi ulaula, a storm is near. ao, cf. 12; onohi, the centre of the eye.
1167	aumaha	Tahiti	dull stifling weather.
1168	cereka	Viti	the breaking of the clouds and clearing of the skies after rain.
1169	draki	Viti	the weather. cf. 1208.
1170	Evang-el-ul	Lamotrek	the star Capella, its appearance presages heavy gales and bad weather.
1171	faahitau	Tonga	a season. faahi, part; tau, year.
	faahitaumafana		summer.
	faahitaumomoko		winter.
1172	fakahekelena	Tonga	deceitful, of a day which began beautifully fine but turned out rough.
1173	fakatetea	Tonga	whitish, applied to certain days when the weather is bad.
1174	feituutau	Tonga	a season. feituu, a definite portion; tau, year.
1175	fitigase	Samoa	of a storm dying out. fiti, to move spasmodically; gase, to weaken.
1176	hake	Tonga	to evaporate.
1177	hau	Marquesas	air. cf. 640.
1178	hauliliki	Tonga	fine weather, very fair. liliki, small.
1179	haumarotoroto	Maori	fine weather, personified as a child of heaven.
1180	hoilo	Hawaii	winter, the stormy season.
1181	hotoke	Maori	winter. cf. 982.
1182	ihee	Hawaii	still, quiet, of the weather.
1183	kaee	Hawaii	to evaporate as water in the sun. cf. kae, to rub out.
1184	kalae	Hawaii	clear, calm, pleasant. cf. 99, 719a, 1188.
1185	kau	Hawaii	the summer season. cf. 1171. Elsewhere in Polynesia kau is the year — the counting — of which there are two in the

twelvemonth. In Hawaii kau is restricted to the summer, hoilo being the winter.

1186 kilo — Hawaii — to foretell what the weather will be.

kilokilo — a watching the singular appearance of clouds.

kilomakani — one who prognosticates the future by observing the winds.

1187 kona — Hawaii — pleasant or good weather. cf. 908.

1188 laelae — Hawaii — calm, pleasant weather. cf. 99, 719a, 1184.

1189 lai — Hawaii — the heavens, especially when the sky is clear and the weather calm.

1190 lakoifie — Tahiti — fair, fine weather. cf. 383.

1191 laofie — Samoa — to be fair weather, fine after rain.

laofie — Tonga — dry, not raining.

laofie — Futuna — fair weather.

1192 likamatagi — Tonga — to fear tempest. lika, to be apprehensive; matagi, cf. 761.

1193 macala — Viti — to clear up.

1194 mako — Nukuoro — a storm.

1195 malugia — Tonga — mild and agreeable weather. malū, to be lulled, of wind.

1196 mapure — Mangareva — long continued, uninterrupted, said of duration of weather.

1197 mariari — Mangareva — fresh, agreeable air.

1198 mata i lagi — Futuna — to look like a storm coming. mata, eye; i, in; lagi, the sky.

1199 mátátá — Viti — to clear up.

1200 mimiti — Samoa — to dry up, as water in the sun.

1201 nanauli — Hawaii — one who predicted the weather by looking at the sky. nana, to look; uli, the blue sky.

1202 ouli — Hawaii — a sign of the approach of a storm.

1203	págdio	Saipan	a storm.
1204	paiari	Tahiti	clear and calm.
1205	pipiri	Mangareva	the winter, the cold season.
1206	puahuru	Maori	close, muggy weather. ahuru, warm.
1207	puhoro	Maori	bad weather.
1208	ragi	Mangareva	the weather, the appearance of the atmosphere.
	lai	Motu	the breeze, the wind. cf. 451, 1169.
1209	ragipaepaevaru	Mangareva	a tempest, time of storm and gale.
1210	rai	Tahiti	the sky.
	rai atea		clear sky.
	rai maeme		black and threatening sky.
	rai poia		black and cloudy sky.
	rai tuatua		a dark and cloudy day.
	rai utiuti		mackerel sky.
1212	riaki	Mangareva	a gale, tempest. cf. lia'i, Samoa, to whirl around.
1213	silagataifale	Samoa	to observe the weather of a place.
1214	tatahau	Maori	to be stormy. tata, to dash down; hau, wind, 640.
1215	tau-mati-afu	Niuē	autumn.
1216	tautuku	Niuē	spring time.
1217	tokia	Maori	fair weather. cf. 477, 911.
1218	tupaki	Maori	fine weather, fair, without rain. paki, fair.
1219	ulotea	Tonga	the first rays of the sun. ulo, a flame; tea, white.
1220	vaipalolo	Samoa	the wet season.
	vaito'elau		the dry season.
1221	vero	Tahiti	a storm. cf. 264, 470, 952.

Pregnant as this record has been seen to be it is yet more remarkable for what it lacks. It is a record very rich in suggestion. We have seen the stately clouds assumed into human ancestries, we have found the winds among the progenitors of god supreme, even the rains have been included in the families of men — yet one great element lacks. Nowhere do we find the slightest trace of such idea as subsists in the phrasing of

sic itur ad astra. The celestial sense is missing, absolutely lacking. Rocks are our progenitors, the earth clouds are our grandparents, nothing in our origin comes from higher than the earth's atmospheric envelope, all is telluric, nothing uranic.

I doubt if any such record of primitive culture with equal evidence of a rational search for a first cause can show such a failure to include the heaven and its stars. A list of 1200 weather words such as these taken from our own speech would fairly glow with references to the sun, the moon, the planets, the fixed stars, the sweet influences of the Pleiades. Yet the Polynesian record is as dark as the starless abysms of space which serve to heighten the contrast of the soft glow of the Magellanic clouds. Here and there in the mass of the traditions which we pass under review we find a stray tale of some one of the heavenly bodies. We may find a scant story of Tapu'itea and how she became the evening star. Earlier in this paper mention has been made of the Maui myth in which that legendary hero appears among other feats as snaring the sun. Yet it is not of such material that sun myths are made, nowhere can we find the sun the creator, the sun the destroyer, the sun the lord of all. Students of comparative mythology will feel a sense of strange loss in prosecuting research into a mass of traditions where the typical sun myth is lacking.

The reason for this lack must lie upon the psychological side. Clearly it may not lie in any physical difference. The sun in the equatorial Pacific is as much as everywhere the source of the great temperature comparisons which underlie the meteors of the weather; if anything the responsibility of the sun for the vagaries of climate might more readily be appreciated there than in more temperate realms. It cannot be that a people who so shrewdly studied the atmospheric sky should not have seen through its transparency to the powers of the celestial heaven beyond. How else could they have accomplished those magnificent voyages which peopled the Pacific? How without a knowledge of the stars was it possible for them to cruise unerringly back and forth between places so remote as Tahiti and Hawaii? Else what meaning might there be in the name of the southern

point of the island of Kahoolawe in the latter archipelago, Ke Ala i Kahiki, the road to Tahiti? Surely these superb navigators knew the stars of the skies above them; it was only when they lost their stars, as the old men sadly phrase it, that the era of the great voyages came to an end and each small island community settled down to a knowledge of itself and its own concerns preserved from monotony by the recollection of the time when the open sea was open indeed to the brave man who dared to set his canoe afloat for adventure. Intimately as Polynesia must once have known its sky the knowledge has long since passed. It will prove an interesting problem for the students of primitive psychology to account for the fact that a race of navigators should have lost its stars and have been condemned to isolation, yet that the science of astronomy should have been given to the world by Chaldean shepherds who moved in life at no more adventurous pace than the grazing flocks they folded.

Yet within the limitations of their conception of the superior powers of nature, under a sky wherein sat no cloud compelling Jove, it is confidently expected that the presentation of this check list of the weather words of the great Polynesian race will show them to be no mean observers both in gross and in detail of the etheric phenomena which so completely condition the lives of the Pacific islanders.

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THE CREEK INDIANS OF TASKIGI TOWN

BY

FRANK G. SPECK

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THE CREEK INDIANS OF TASKIGI TOWN[1]

By FRANK G. SPECK

The Creek Nation

As the Taskigi formed one of the towns constituting the Creek Nation, a short account of this group of tribes may present more clearly the political background in which we find them living.

The old Creek Nation was a loose confederacy, as it might be called, of a number of Maskogian-speaking towns and subtribes, avowedly for the purposes of keeping peace and of offering a front of strength against hostile and alien neighbors. Many of these towns were tribal units sometimes themselves separated from each other by far-reaching differences in dialect and customs. Even alien linguistic stocks were admitted into the Nation, as we find the Yuchi, Shawnee, and, until lately, the Natchez, represented in the Creek assemblages as prominently as the Maskogi tribes proper. On the whole, however, the differences in material culture and customs that separated these independent towns from one another were not so great as it may be thought, as a certain amount of uniformity pervaded the whole Southeastern region. The fact that none of these towns has been specifically studied as yet in completeness, makes it impossible to say just how far suspected differences extended. From what we do possess of special treatment, however, it seems evident that in ceremonial and religious matters divergences in detail existed. If the following description of the square-ground and ceremonies of Taskigi town be com-

[1] Published with the permission of the Bureau of American Ethnology, Washington, D. C., and the American Museum of Natural History, New York, which, on the recommendation of Dr Franz Boas, furnished funds for the study of the Yuchi Indians in 1904 and 1905, during which time this material was incidentally obtained.

pared with that of Kasi'ta and Tukaba'tci given by Gatschet, of Odshi-apofa by Swan, and of Atasi by Bartram, this will be seen more readily. In mythology, too, there is probably some variation from one town to the other.

At the present day (1905) the following towns[1] are recognized by the Creek national government, in various stages of disintegration and intermixture. They give a total of about 10,000 souls for the Creeks.

Abika	Kwassati	Talmotcasa
Alabama	Lutcapoga	Talwałakko
Atasi	Łałakalga	Tạlsi
Greenleaf	Łapłakko	Taskigi
Hatcitcapa	Łekatska	Tciaha
Hickory Ground	Łewałi	Topofka
Hilabi	Okfạski	Tukaba'tci
Hitciti	Oktcayi	Wiłakko
Kantcati	Osotci	Wiwo'ka
Kasi'ta	Pokontalahassi	Wiyogạfki
Kawita	Taladigạ	Yufâla
Kayaligi	Talahassudji	Yutci

Of these, Abika, Yufâla, Okfạski, Kwassati, and Tạlsi have split apart into smaller settlements bearing the name of the parent town, usually with some local modification. But these offshoots mostly celebrated their religious rites with the home town, as they had no square-ground of their own. Gatschet mentions another settlement belonging to Taskigi. The negro freedmen of the Creeks were also represented politically by three or four town names, and their settlements were admitted into the Nation on an equal basis with the Indian towns after the Civil War.

The accompanying map attempts to show approximately where the survivors of the old town divisions are situated, with some tendency toward centralization and maintenance of their former relations amid new surroundings, since the removal to Indian Territory in 1836–40. But it must be understood that by situation is meant only the densest settlement of those

[1] Gatschet, in his *Migration Legend of the Creek Indians*, has given a similar list and offered translations for many of the names of towns extant in 1884.

belonging together under the one town name. Some of the old towns have become extinct and other new ones have been formed by negro freedmen and emigrants.

The Taskigi

Introduction

Benjamin Hawkins was one of the first writers to mention the Taskigi.[1] In his time they formed one of the towns of the Upper Creeks, occupying the fork of Coosa and Tallapoosa rivers in Alabama, where formerly stood Fort Toulouse of the French. They numbered then, 1798–99, thirty five gun-men. Hawkins states that five conical mounds of earth were situated near the village, which were explained by the Indians as places of safety in times when the river overflowed its banks. He also says that the Taskigi came from across the Mississippi; that they have lost their language and speak Creek, and have adopted the customs and manners of the Creeks. Gatschet[2] gives a review of the information on Taskigi town and suggests that, in consideration of its supposedly foreign name, the word Taskigi might be related to a Cherokee town name on Great Tennessee river. Mooney[3] gives a short historical review of the Taskigi and the situation of the three Cherokee towns bearing the name. The largest settlement of those incorporated with the Cherokee was on the south side of Little Tennessee river, just above the mouth of Tellico, in what is now Monroe county, Tennessee. Here was born Sequoya, the inventor of the Cherokee syllabary. Another so-called Taskigi town Mooney gives as being on the north bank of Tennessee river, just below Chattanooga, Tennessee. And the third settlement was on the south bank of Little Tennessee river, north of where Robbinsville, Graham county, North Carolina, now is. Mooney states that the Taskigi were classed as a foreign people

[1] Sketch of the Creek Country, *Georgia Hist. Soc. Coll.*, III, pt. 1, pp. 37–39, 1848.

[2] *Migration Legend of the Creek Indians*, I, pp. 145–146, 1884.

[3] Myths of the Cherokee, *Nineteenth Report Bureau of American Ethnology*, pt. 1, pp. 388–389, 534.

by the Cherokee, and thinks that they were probably of Maskogian affinity.

Adair[1] and Milfort assert that the Taskigi were one of the weaker tribes of the Southeast which were broken up by the more numerous Creeks and Cherokee in their advances, and subsequently incorporated by them, along with other tribes in a similar condition, like the Natchez in later years and the Yuchi who joined the Creeks.

Leaving these theories without discussion, it appears that the present name Taskigi does not yield to definite analysis. The Taskigi themselves say that it is an old word, and suggest a relation to *taskáya*,[2] warrior, and *tastaṇági*, warrior.

The language of the Taskigi is normal Maskogi and they call themselves *Maskogaṇlgi* (*-aṇlgi* collective plural). In another article[3] I have attempted to give an outline of the Maskogi language, and the Creek material used in it was obtained mostly from Taskigi town. Their present location is approximately between Polecat creek and Canadian Deep Fork, in the northwestern part of the Creek Nation, Oklahoma. Here the accompanying notes were made in spare time during the course of linguistic studies among the Yuchi who are now the nearest neighbors of the Taskigi on the north. The culture of this tribe is practically the same as that of the other forty-two Indian towns of the Creek Nation, the only points of difference being in details of ceremony and town life. The Taskigi were represented in the Creek Confederacy council after the Civil War by a chief, in the

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[1] *History of the American Indians*, 1775, p. 257.

[2] PHONETIC NOTE: Surd *tc* and sonant *dj*, lingual alveolars, *dj* represents a sound about midway in position between dz and dj; *b* is indeterminate between surd p and sonant b; *d* is also of the same indefinite nature and produced as an alveolar dental; *ť* is a soft palatalized spirant surd; *g*, a palatal sonant; *q* a velar surd; *g* the sonant of the same series; *f* a normal labial dental surd; *c* like English "sh"; *l*, *m*, *n*, *s*, *k*, are like the English. Semivowels are *h*, *w*, *y*. Prolonged consonants are written doubled: *kk*, *tt*. Vowels *ā*, *ē*, *ī*, *ō*, *ū* are long; *a*, *e*, *i*, *o*, *u* short; *ạ* open and obscure like "u" in English "but"; *â* like "a" in English "all"; *ä* long and open like "a" in English "fare" without the "r" tinge; ⁿ nazalized; *ai* diphthong. Accent is denoted by ` and ´; ʿ indicates aspiration; ᵉ a glottal catch.

[3] *American Anthropologist*, N. S., IX, no. 3, 1907.

House of Kings, and two delegates in the House of Warriors until 1906. The cultural condition of this town has undergone many radical changes in the last ten years. The annual ceremony of the corn harvest has been discontinued and the old people are the only ones who retain any knowledge of their ethnology. Most of the material here given was obtained from Laslie Cloud, Kabítcimała, of the Raccoon clan, a former dance leader and ceremonial official, and until his death in 1905 a practising shaman of the town.

The matter deals exclusively with Taskigi town. No attempt has been made to correlate it with that of other towns, as it may become possible at a later time to procure material from some of them for maturer comparison.

Nowadays it is very hard to say how many Creeks class themselves as Taskigi; but there are probably not many more than 150, and of these it is highly improbable that any are of pure Indian blood. The admixture of white and negro blood has proceeded so far since the close of the eighteenth century that the number of unquestionably pure Indians in the Creek Nation is very small indeed. The younger generations are much more visibly of mixed race than their elders. Yet despite this, and the general decay of their material and ceremonial culture, the language is rigidly but unconsciously preserved by the natives almost without exception. It is true that many of those whose features are characteristically negroid are proficient only in the Creek tongue and genuinely exhibit in sentiment all the peculiarities of Indians.

Material Culture

Economics. — In their original habitat in Alabama and Georgia the Taskigi enjoyed extremely warm summers, especially along the river bottoms where they had permanent villages, and very moderate winters. A great variety of animal and vegetable products surrounded them in all seasons. Like the rest of the Creek tribes, the Taskigi were much concerned with agriculture. Corn was, and is to-day, their chief vegetable product. They spent much time, however, in hunting deer,

turkeys, and bison, in which they were aided by dogs. They utilized the non-edible parts of these animals in various domestic ways. Songs were believed to charm the game so that it could be approached and shot. They still practise the old method of shooting fish with a straight simple bow made of the osage orange (*bois d'arc* of the French), and long arrows tipped with a piece of rolled sheet-metal. The fish arrows often lack feathering. They poison the streams to secure the fish by pounding up quantities of horse-chestnuts and throwing them into pools which they have dammed up at different points. Then the men go into the water to mix up the poison, beating around with their arms and stirring up the water so that the fish cannot escape by staying near the bottom. The fish are then stabbed with arrows and thrown out to the women on shore who stow them away in large splint baskets. Large quantities of catfish were procured in this way.

The only form of house remembered by the present inhabitants of Taskigi town is the log house, *djógo*. This they use to-day with the addition, in front of the door, of a square shade arbor of leafy branches supported by four or six crotched posts. Much time is spent beneath this shelter, and in warm weather the family prefer to sleep there. According to Bartram, the typical house of the Creeks consisted of four upright corner posts, arranged to inclose a rectangular space of about four or five hundred square feet, with smaller posts ranging between. The roof and sides were covered with slabs of bark. These structures numbered from one to four to each household, according to the town or tribe, and were often so set up as to inclose a square yard. Notched-log structures were also observed at an early date among the Creeks and the Cherokee, and it may be that the present-day log-house is a descendant of an older type. The modern example is seldom larger than the ordinary settler's cabin, containing one or two rooms formed by a partition. Home-made shingles cover the pitched roof, and a clean-swept area or yard lies before the door. Corn, melon, or potato patches are nearby.

The sweat-house, so far as is now remembered, was a tem-

porary structure of poles covered with skins, and was erected near a stream. To this the men resorted before going to war or before other important undertakings. Steam was produced by throwing water on heated stones passed inside by attendants. The men remained in this inclosure until they perspired profusely, then jumped into the stream.

UTENSILS. — Pots were manufactured, even up to a short time ago, of clean red clay coiled upon a disk-like base. To fire these they were covered with dried grass and the mass was ignited. When the combustible covering had burned off the pot was black, and so hard that it could withstand the effects of daily contact with fire. Pipes of unbaked clay are still made in some of the remote parts of the Taskigi district.

Baskets of various shapes were made of cane and hickory splints for household use. The favorite technique in basketry was the twilled. The weaving showed some diversity in details, produced by allowing the woof strands to pass over one, two, three, and frequently four warp strands at a time. Decoration on baskets, so they say, was rare, but when desired was obtained by manipulating varicolored splints in the woof. The splints were shaved from the rind of the cane. This gave a smooth glossy surface on one side which was turned outward in weaving. The commonest basket shape had the bottom quite flat and wide with the wall tapering slightly inward toward the top. Sieves of open twilled work were made for sifting pounded corn. Twilled mats of cane were formerly made, but are not now to be seen.

The corn mortar which stands to-day as a permanent fixture in nearly every house-yard is made of a plain log hollowed out, and the heavy-topped wooden pestle is usually five or six feet in length. A very common article of diet, called *sófki*, is made of pounded and sifted corn boiled in water. Sometimes wood-ashes, pounded hickory-nuts, or bone marrow are mixed with it. *Sófki* tastes quite bitter, but it is very nutritious. A bowl of it stands, with a wooden spoon in it, at the door of nearly every house, from which the stranger is invited to help himself. Woodenware was not very extensive, nor did it bear elaborate

decoration. Pot stirrers were paddle-shaped, with a disk at the handle end. Spoons and ladles were common, with rather deep bowls tapering almost to a point at the front. For navigation upon the sluggish rivers of their old home large trunks of cypress yielded them excellent canoe material. It is claimed that these dugouts were slightly elevated and pointed at both ends.

The bows used in hunting and warfare were staves about four feet in length, made of hickory or osage orange. Arrowshafts were made of cane or arrow-wood and were feathered by binding trimmed quills on three sides near the nock. Turkey feathers were much in use for this purpose. Another implement of the chase that was common to the Southeast was the blow-gun, *wókko*. It was made of a cane stalk about as long as a man is tall. To remove the pith it was sometimes necessary to section the cane, then bind it together again. The darts were made of sharpened stems wound about one end with some soft material, such as cotton, which acted as a piston. The blow-gun was used chiefly for killing small game.

CLOTHING. — Men's clothing consisted of deerskin leggings, shirts, blanket-like robes, and moccasins with the seam running up on the instep from the toes to the ankle. During much of the year, however, no covering was needed for the feet and they went barefoot. After the advent of the whites at least they wore woven sashes of wool with tassels hanging down on the sides. Bands of woven woolen stuff were used as garters below the knees. Both of these articles were ornamented with beads sewed on in geometrical designs the significance of which has now been forgotten. The breech-cloth, which passed between the legs, either ended at the belt or had flaps that could also be decorated. The man's daily outfit was made complete by a pouch, slung over the shoulder on a broad beaded band, to hold tobacco and pipe. They wrapped bands of skin or obtainable cloth stuffs about their heads after the fashion of a turban, according to surviving tradition. Under this the hair was trimmed about the ears and banged across the forehead. Sheets of hammered-out metal shaped like crescents were much in vogue as

pendants upon the chests of distinguished men. Earrings and brooches of German silver were manufactured in quantity during early colonial times and used as ornaments by both sexes. Women wore deerskin skirts hanging to the knees, with a cape-like covering thrown over the shoulders and upper arms and fastened at the throat. The borders of these garments were ornamented with beads and metal brooches. Their hair was tied in a club behind, while a metal comb-like band surmounted the crown from which hung highly-colored streamers.

Social Organization

The Town. — The present settlements of these Indians are scattered along the creeks and rivers, in no respect forming a compact town. But in their ancient territory in the Southeast they were more centralized, and had many regulations governing the cultivation of land and its apportionment. The name for town is *tálwa* and is used also to denote tribal affiliation; a mere settlement not having the town organization and ceremonies is *talófa*. As all of the former cultural conditions have changed so much, the town is now a very loose institution. Gatschet says that Taskigi was one of the White or Peace towns of the Nation, wherein no blood could be shed and which was governed by civil instead of military officials.[1]

The town, however, is still the political unit, and like the other Creek towns the Taskigi had a public square-ground or yard to a certain extent of a sacred character.[2] In former times the square was situated in the heart of the town itself, but later it came to be established where most convenient for the scattered families. On the four sides of this square, which faced the points of the compass, lodges or cabins with brush-covered roofs and open sides were erected. Rows of logs raised above the ground formed seats inside. The earth floor of the square was kept hard and smooth, and no vegetation was allowed to encroach upon its limits. At one corner was

[1] *Migration Legend*, op. cit., I, 122.

[2] The last town square of this sort was situated on the Little Deep Fork of the Canadian river, near Tuskegee, in the present Oklahoma.

the council house. The whole square, house and all, was called *djógo łákko*, 'big house.' All meetings, ceremonial and civil, formal and informal, took place in the square when the weather was pleasant, or in the council house when it was inclement. Nearly all the inhabitants of the town were accustomed to gather here for social purposes or dances in the evenings. In the center of the square lay the bed of ashes where the fire, *túłka*, was kept burning at all gatherings (see diagram, fig. 1).

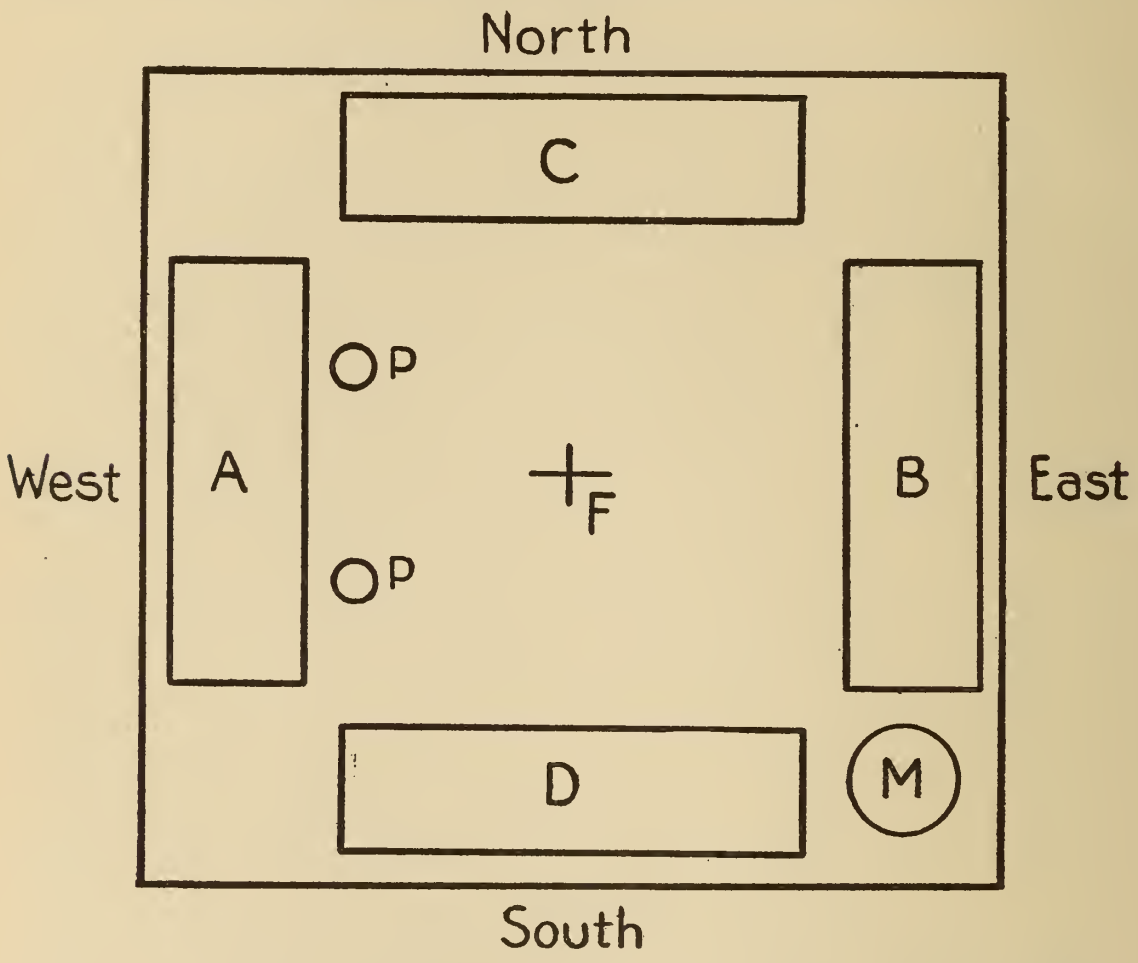


FIG. 1. — Diagram of Taskigi Town Square. (*A*, Lodge for town chief, chiefs, and *hínīha łákko; B*, *C*, Lodge for warriors and *tastaṇágī łákko; D*, Lodge for women, children, and strangers; *F*, Fire; *P*, Pots of medicine; *M*, Mound of earth. *F*, *P*, and *M* are employed during the celebration of the annual ceremony.)

Here the new fire was kindled, at the annual ceremony, for distribution to the various households. Near by, in a cleared space, ball-games and other athletic contests were held with other towns, or with tribes as it often happened.

TOWN OFFICIALS. — As has been said, the town, composed of the various clan groups, was the political unit with its own officials and its open religious ceremonies where the clans took part subordinately. The highest in rank of these officials was the *míko*, town chief. He was chosen from a certain clan in the town and his tenure was for life. In Taskigi the *míko* was chosen from the Bear or the Wind clan. The function of this dignitary, as the civil head of the town, was to receive all embassies from other tribes, to direct the decisions of the town council according to his judgment, and finally to stand as the representative of the town in foreign negotiations. If the *míko* could not leave his town he appointed a delegate who bore his title to attend the councils of other towns or those of the Confederacy. The town chief had also to appoint the time for the annual harvest ceremony. He had personal charge of the town square and the lodges about it, and it was his duty to distribute the broken sticks to the heads of families by which they were to number the days to elapse before the ceremony. The Taskigi have been known to depose their town chief on the ground of inefficiency and to elect another from his clan instead. The title *míko* was used after the full name, as *Nókusi hádjo míko*, 'Bear Crazy Chief,' the last town chief of the Taskigi. The head of the Creek Confederacy council was called *míko* as well, and the title was even applied in a loose way to the high officials of a town when spoken of by outsiders.

Next in rank to the *míko* were three men chosen from any clans called *tastanági*, 'warriors,' who formed the chief's council which decided matters of public importance. One of these men was their nominal head and bore the title *tastanági łákko*, 'big warrior.' These councilors were the actual potentates of the town in affairs of war or in its relations with other tribes. In later times, when a form of legislation was introduced in imitation of the whites, a sort of court developed out of the public gatherings in the town square. A judge, *futdjïdja*, and pleaders, *ahágamanédja*, appeared who imposed penalties of fines and whippings for cases of theft and rape, and death for murder. The *tastanági* as police executed the sentences. The title was also used as a term of address and as part of the personal name.

Besides these civil officials there were a few others having special functions in the harvest ceremony. There were always two men of recognized ability in dancing, having also a knowledge of the rites, who were known as *híniha*, or *híniha łákko*. Their occupation was chiefly to procure leaders for the various dances or to lead themselves, and to encourage the participants when they became fatigued. War parties leaving the town were always headed by a man of proved physical prowess and cunning, and his title as leader was *pakádja łákko*. Another individual, called *hobáya*, 'prophet,' accompanied such forays. He was versed in songs and rituals with which he could weaken the enemy and blind the eyes of their warriors. He could also foretell events and determine whether raids or hunting excursions would be successful or not. A man who amassed property or raised himself in public esteem by other means was called *isti adjáqa*, 'man beloved.' No civil office, however, was indicated by this title, but those bearing it occupied a certain place in the lodges about the square. In a general way 'beloved men' also means those who have observed all the dietary taboos of the ceremonies, and even, in its broadest sense, those who have undergone the purging and taken their part in the religious performances.

The above names and titles are those used in Taskigi town, but in some of the other Creek towns they were used in different ways and the persons bearing them had different functions.

Facial painting was employed to indicate rank in the town. Persons bearing the title of *míko* or *híniha* wore black paint on one side of the face and red on the other, coloring either the whole face or only the space around the eyes. The second pattern belonged to ordinary initiated men having the title *taskáya*, and consisted of four stripes, from the cheek-bone to the angle of the jaw, alternating in red and yellow.

The general arrangement for the seating of persons bearing the above titles in the lodges of the town square is given in the accompanying diagram.

THE CLAN. — The Taskigi social unit was, and is, the clan, *malḗkida*. There are at present fifteen of these remembered,

as follows, the first four in their order of precedence: Bear (Nókusalgi),[1] Panther (Kátcalgi), Wind (Hodálgalgi), Deer (Idjowalgi), Bird (Fúswalgi), Fox (Djúlalgi), Raccoon (Wótkalgi), Beaver (Itcáswalgi), Alligator (Halpádalgi), Mud-potato (Ahálaqalgi), Mink or Otter (Okdjátkalgi), Snake (Tcítalgi), Buzzard (Súlalgi), Skunk (Kúnipalgi), Rabbit (Tcófalgi). In former times, no doubt, others existed, but they are now extinct and forgotten. The clans are believed by the Taskigi to have been created in the beginning by the Master of Breath, deriving their animal characteristics from certain traits displayed by beings as they passed in review before him. He enjoined them not to marry their own kind lest they die out, and since that time they have observed the exogamous principle. Clan descent is reckoned through the mother. All the males of one clan call each other "brothers," the females call each other "sisters." One of the names by which a man addresses his clan sister is *anhómbida háya*, 'my food maker,' or cook. Property is not, however, generally inherited from the mother, but passes from father to son. The leading clans among the Taskigi are the Bear and the Wind. The town chief was chosen from one of these two. As descent is traced back to the totem animal itself, it is considered wrong for a man to kill or eat an animal having the form of his totem, as it would be the same as eating his own human relations. Such offenders are nowadays punished by fines which have to be paid to those of his clan who catch him in the act. Furthermore, should one person ridicule or belittle another's totem, he is likely to be taken and fined for wrong-doing by the offended clan. The fine is believed to appease the totem. No legislation was carried on by the clan itself, nor was there any clan chief. Murder of a clansman was avenged by concerted action on the part of his kinsmen. But should the murderer escape them and hide until the next harvest ceremony he was received by the community without further molestation. There was no special arrangement for the clans in assembly; they occupied quarters

[1] *-algi* denotes collective plural.

in the town where they chose, having their assigned planting grounds at a convenient distance. The rules of land and harvest tenure have been completely forgotten in Taskigi, owing to their changed conditions of life since their removal westward in 1836.

Customs

BIRTH. — During menses the woman remained in seclusion and did not come into contact with anything belonging to her household. At the approach of childbirth she also retired to the seclusion lodge and neither she nor the father resided in the usual house for the period of a month. The mother was allowed to partake of food from the time the child was born, but the father fasted for four days thereafter. For a month after the event, the mother was not allowed to prepare her husband's meals nor to eat or sleep with him, and he on his part was not allowed to touch her.

NAMING. — A male child was given no name until he had been initiated, but was known by the name of his totem, *Fúswa* 'bird,' *Tcítto* 'snake,' or perhaps some other epithet derived from a personal peculiarity. Girls were not called by the totem name however, but were generally addressed by the kinship term or named after some natural occurrence or object connected with their birth. This name they retained without change through life. Examples of female names are now very rare.

INITIATION. — When the boy had reached the age of puberty he was prepared for his initiation into the rank of manhood in his town. This conveyed to him the privilege of marrying, taking up land, occupying a man's place in the lodges about the public square, and taking an active part in civil and military matters. The initiation of such boys and their acquisition of names took place at the annual harvest ceremony in the following manner: The boy who had been known from infancy as *Fúswa* 'bird,' Wótko 'raccoon,' or some other clan name, had to undergo the scratching operation and take the emetic with the men of his town. At a certain time during the procedure of the harvest ceremony, the *tastaṇági łákko*, 'big warrior,' arose from his place and called one of the candidates forward. He then presented him with a

piece of tobacco and pronounced aloud one of four titles, which henceforth belonged to the candidate as an addition to his clan name. There were four of these titles, all of equal rank: *Hádjo* 'crazy' 'droll,' *Fíksigo* 'heartless,' *Imáła* 'leader,' and *Yahólo* 'one who makes a loud cry or whoop.' The Big Warrior chose one of these names for each of the boys at his own option. After this simple ceremony the boy was considered a man and entered into a class of *taskáya*, 'warrior,' in his town. A rather detailed course of preparation was necessary to the boy before his public receipt of the title, but none of these rites are remembered very well. Examples of men's names in Taskigi are *Nókusi hádjo* 'Bear crazy,' *Kátca fíksigo* 'Panther heartless,' *Wasinda hádjo* 'Washington crazy,' *Tcáswa fíksigo* 'Beaver heartless,' *Idjo yahólo* 'Deer cry.'

Marriage. — When a young man desires a young woman for a wife nowadays there is very little in the way of ceremony to be performed. Desired sexual relations are had at will among most of them, personal attachment being the chief consideration between the parties. The usual method adopted by the young man is to ask the girl's parents for her, and with their consent to take her to a cabin already prepared for them or to reside with the parents until one can be made ready. If the man marries into another town he becomes a member of that town, the children all belonging to it as well. The husband, however, still retains allegiance to his own town and must not play ball at any time against it. Should he do so he is likely to be maltreated by his townsmen in the game, and the name 'traitor' *oháisa*, is given him. A man could have more than one wife, if he chose. Divorce was always possible by mutual consent, but the man was apt to become unpopular. Persons separated in this way never again held any manner of intercourse. The wife sometimes accompanies her husband to his town and resides there; the children in that case belonging to that town.

Warfare. — As to war, little first-hand information is obtainable. However, on frequent occasions during colonial times the whole town went on the warpath; that is, all the able-bodied men as representatives of their town joined their brother towns of the Confederacy in the battlefield.

Small parties of adventurous youths, or raiders, were frequently made up under some proven leader to go out on minor expeditions. It is said that they carried a bundle of magic herbs and fetishes which was in charge of the leader, *imíssī*, or of the shaman and prophet, *hobáya*. One of the "medicines" in this bundle was believed to be parts of the horns of a certain mythical snake that was captured and killed by the people after it had destroyed many of them for generations. These horns were believed to render the warriors immune to wounds. Another object remembered as part of the bundle's contents was cedar leaves, *atcína*. When a warrior became wounded he called for the *hobáya* to come to him and give him an emetic of the *atcína* which was thought to insure recovery. A wounded man had little hope for recovery if this could not be done. The *hobáya* was a busy man in battle, for, besides carrying the fetishes and administering the emetic, he had to sing and shout certain songs and formulas which would frighten and confuse the enemy. When such a party returned with scalps they were welcomed in the town-square and often publicly raised to a higher rank in the town and given a new title, such as *tastạnągi*, if they were of age, or a title denoting the full rank of manhood if they were boys. Many rites of preparation before taking the warpath were observed in the past, but these are now forgotten with the exception of the practices of taking the emetic made of red root, *míko huyandĭ dja*, 'chief physic,' and the sweat-bath under the supervision of a shaman.

As already intimated, scalps were taken from enemies. The act was accompanied with a whoop terminating in several tremulous throat tones in imitation of a turkey's gobble. This was given to announce success to the band. Prisoners belonged to the captor, and could be killed by him for their scalps or taken back to the town to be tortured in the town square, or held for ransom.

MORTUARY. — The body, as soon as the soul, residing in the heart, has left it, is treated as follows: The male members of the family take their guns and go outside of the house and there fire them off to make known the death to the rest of the village.

The friends and relatives then assemble at the house and spend some time in mourning and expressing grief. No one, however, cares to touch the corpse in fear of evil consequences. It is said that during an epidemic some time ago there was such difficulty in getting persons to dispose of the dead that the bodies lay around the village unburied until the people had to leave. Only persons who have been properly fortified by magic rituals dare handle the body.

The corpse is then carried to the burying ground, where a grave has been dug, and lowered in. Some relative then discharges a rifle toward the four cardinal points. Slabs of elm-bark are put over the body, and as soon as the earth is thrown in they clap their hands and shout and laugh. Coffee is put in a cup over the left shoulder and clothes are laid along the side of the body. The fresh earth dug from the grave is believed to produce sickness in the form of rheumatism in the person who steps on it. A small house, either of logs or of boards, is then constructed over the grave. A fire is kindled at the head of the grave and tended for four days by the relatives until the soul is believed to have reached the passage to the sky. As soon as they reach home after the interment the members of the family put some powdered ginseng, or white root, into a cup and blow it around the house and yard to keep the spirit of the dead from returning. Formerly horses were killed at the grave in order that their spirits might carry the soul toward the spirit land.

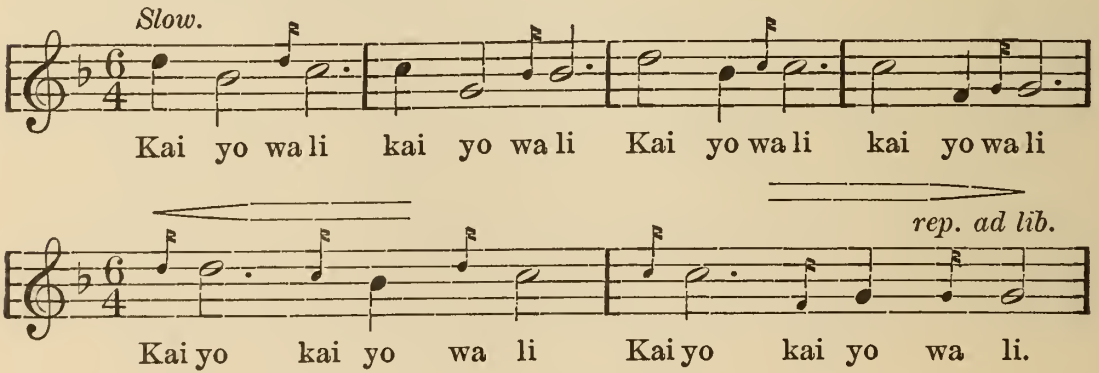
The fire, which was always burning in the house, was allowed to go out when a death occurred, so when the mortuary rites were concluded a new fire was kindled with a ceremony and song called *tū'tkamodjása ingasúpid*, 'fire new its cooling.'

Temperamental Characteristics. — A few remarks on the temperamental characteristics of the Creeks are of incidental interest although not offering much that is unusual to other Indians. The men do not appear to be very desirous of giving the impression of dignity; they mingle freely with others and exhibit a certain loose-mannered joviality. They seem to relish jokes on each other, and a little obscenity adds to the flavor of a story of gossip. Nicknames and comic epithets,

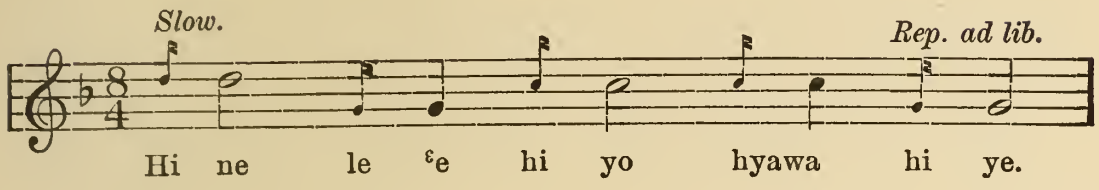
such as *Halpáda* 'alligator,' *Istīdjū́lī* 'old man,' *Halpadadjū́li* 'old alligator,' and others of like nature are frequently given to persons of droll appearance.

In their quarrels, too, a great deal of abandon is shown, and if nothing interferes to stop them, fighters are soon carried away by their fury. Butting the opponent in the abdomen with one's head is a common method of attack. Another procedure, known as "pitching," is employed to obtain mild revenge. The vindicator and several friends waylay the offender, sieze him by the legs and shoulders, and drop him upon the ground. They pick him up and drop him in the horizontal position over and over again until he is sufficiently bruised or injured to suit their taste. Fighting of any sort is greatly to the liking of the Creeks.

There is a certain exuberance of spirits among the men which at times finds its expression in bursts of song. When riding along the trail in lonely places, or at night when everything is quiet, in fact whenever the feeling seizes them, they break out into these plaintive strains to drive away spirits which make them feel sad or lonesome, as they say. Of these snatches, or burdens we might call them, there are several which seem to be used indiscriminately when the mind is weighted with emotions of amorousness, loneliness, sorrow, joy, or other excitement. Drunken men may be frequently heard singing in this way. Some of the Indians call the songs "drinking songs" on this account. The syllables are without meaning, and the theme is repeated with some variation in the syllables and in the stress and tones according largely to individual fancy. The key, too, seems to vary in accordance with the singer's range. The best known burden among the Creeks of this and neighboring districts is —



Another burden noted in the same key is —



Shamanism

All bodily affliction is believed to come from the presence of some foreign and harmful matter in the system, placed there by either some animal spirit or a conjurer. So long as this substance remains in the body it can not be cured, and it is likely to come from so many sources that the Creek finds it necessary for his health to be constantly on guard against the operation of malevolent spirits and conjurers by observing the proper taboos.

To have the noxious substance removed, the services of a shaman, *owála*, are required. He must first discover what animal or malevolent spirit is causing the trouble. This is done by secret methods upon which the skill and reputation of a medicine-man usually rest. Some of them can tell a patient's ailment by examining his shirt, for which a charge of twenty-five cents or its equivalent in tobacco is made.

Certain roots and medicines are necessary to the shaman to drive out the trouble, and formulæ and songs for various complaints mention the medicines needed. When these have been procured and steeped in a pot, the shaman produces a tube through which he blows into the mixture between the stanzas of certain songs which go with the herbs constituting the formulæ. The blowing strengthens the medicine until it is stronger than the causative agency. The medicine is taken by the patient internally and externally after it has been properly exorcised. The purpose of the shaman is to throw the disease into an animal, but not the one that causes it. A medicine-man may also be hired to cause disease in others, but it is dangerous for him to act thus as he might be detected and punished by death. The shaman had a sort of ceremonial rank, too. His position

was that of a highly important public practitioner. He even furnished charms for young men to use in influencing the affections of girls, in the nature of songs called *póyagwítska yahaígi*, 'lonesomeness song.'

The origin of the formulæ referred to is attributed to the animals themselves. According to the belief that in the beginning the animals made the diseases, so we find that they made the remedies for them. The myth telling of the origin of disease mentions the following animal causes: panther, bear, snake, hog, bird, cat, horse, beaver, dog, lynx, otter, fish, game animals, water creatures, seashore creatures, marine creatures, snakes collectively, fish collectively, small water animals, raccoon, opossum, sky-hog (a sidereal being), rainbow, spirits, earth of various colors and sorts, old fire, buzzard, living people, turkey, water wolf, seashore wolf, deer, rattlesnake, owl, and what-is-inside-of-me. Incidentally some idea of Maskogian concepts of the animal world is reflected in the list. The medicinal herbs and objects mentioned in the formulæ as physical aids are, in part, cedar, bird's nest, wild-cherry bark, broken twigs and leaves, corn-cob, sassafras, ginseng, button-snake root, and other plants with the following names, translated from Creek: hog-ear, hog-medicine, deer potato, yellow-in-the-water, in-the-water-white, looks-toward-the-sun (sun-flower), and panther-medicine. A characteristic of these medicinal antidotes is that they are chosen in the belief that "like cures like." For instance, the medicine that goes with the formula for headache caused by the sun is sun-flower, 'it-looks-toward-the-sun'; for the complaint caused by deer, it is deer-potato; for that induced by the hog, hog-ear, and so on. The belief in sympathetic healing and the significance given to cardinal points and colors are also characteristic of the medicine practices of the Cherokee.[1]

The texts of the formulæ and songs are invocatory to the various animal causes. They often describe the peculiarities of the deer, snake, bird, or whatever it might be, as though the shaman were following its course of movement in his imagina-

[1] Mooney in *Seventh Ann. Rep. Bur. Amer. Ethnology*, 329 et seq.

tion. Frequent mention is made of the cardinal points, and a color symbolism is assigned to them—north, *kasąpófa*, 'where it is cold,' is black; south, *nigátofa*, is red; east, *hasósa*, 'sun-rise,' is white; and west, *hasakalàtka*, 'sun-sinks-into-the-water,' is yellow. Even the color idea is extended to the animals, and when one is addressed in a song or formula he is named with first one color then another until the four are completed. The sacred number of the whole Maskogian group is predominantly four. The music of the songs is chiefly a repetition of certain themes with now and then a variation in some notes. At the end of the song the cry of the animal mentioned in it is imitated in many cases.

The plant spirits play an important part in the relief of the sick person. In some such way as the animal invoked in the formula is believed to withdraw his cause, so the spirit of the plants used are invoked to aid in driving the trouble out. The medicines are taken internally and also applied externally. To use a concrete case the deer are believed to cause such and such a sickness. When the words of the formula or song exorcise the deer to relieve the patient, the actual plant matter, which bears some analogy according to the native philosophy to the animal itself and therefore belongs in the same class, is used as the tangible aid in the operation. Hence it happens that a plant called "deer potato" is steeped in water and this is drunk as medicine.

A few additional folkloristic facts belong here; for instance, gentian is commonly used to put on cuts to draw out inflammation; a terrapin shell charred and pounded to powder is mixed with opossum oil and used as a salve for cuts, burns, or bruises. Rattles from the rattlesnake are believed to be direct causes of sick feelings if they are looked upon. Deer antlers are held in the same light, and the Taskigi refuse to touch them on this account. When deer were killed the horns were burnt up lest they cause sickness in someone. A great horned snake is remembered by the Taskigi, the horns of which were used as a powerful medicinal agent.

FORMULISTIC SONGS[1]

The following shamanistic songs and formulæ were sung by Kabítcimała (Laslie Cloud) in 1905 and recorded on the phonograph.[2] Many of the words of the texts are obsolete. This fact, coupled with that of the apparent syncopation and apocopation of many of the verb forms and derivatives, makes the exact analysis of the words very often difficult. Hence the translations, which were offered by the informant, are only approximate ones in many places and some forms expressed in the texts are omitted from them owing to uncertainty.

1. HEADACHE SONG (*Iganúki yahaígida*).—The deer are believed to cause headache. *Mikoanī́dja*, 'chief physic' (Salix species?), is the root used as a brew. The sufferer drinks a quantity of it and has some blown over his head by the shaman. The formula is sung four times; after each several vigorous blowings are given to the concoction.

Formula: *Hyawáhiē* (repeated a number of times).

scatter			
ahólodjē	*láni*	*des*	*awáhin*
cloud	yellow	these	scatter
hólodjē	*djádi*	*des*	*awáhin*
cloud	red	these	scatter
hólodjē	*lásti*	*des*	*awáhin*
cloud	black	these	scatter
hólodjē	*hatki*	*des*	*awáhin*
cloud	white	these	scatter

2. SUN THE CAUSE (*Hássi alḗdja*).—This is also a headache formula where the cause is believed to be the sun. Sun-

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[1] The usual accent of words is found to be frequently changed in the song and formula texts to meet the requirements of rhetorical and musical accent. In such cases the sounds and accents are given, as nearly as possible, as they were heard. But where there is uncertainty regarding the accent it is left out, being reserved for treatment when the musical records have been transcribed. The rhythm of the songs and formulas is usually pronounced and regular, but often it shows irregularities which may be attributed in part to the physical infirmities under which the informant was laboring. The texts, as here given, lay no claim to philological accuracy.

[2] The records are now in the storerooms of the American Museum of Natural History, New York, under the labels P.R. 1048, 1037, 1053, 1068, 1042, 1035, 1036, 1040, 1013, 1034, 1016, 1046.

flower (Helianthus annuus?) blossoms, *hássi yahā́gi*, 'looks toward the sun,' are used as ingredients of the medicine. The formula is sung four times, with blowing in the intervals.

Formula: *Sīwà* (sung a number of times)
scatter
nítta hássī
day sun
nílī hássī
night sun
kolaslobótski
small stars
siwà
scatter

3. Deer the Cause (*I'djo alḗ dja*). — Swelling boils on the body and limbs are caused by the deer. The brew for this complaint is composed of *atcína*, cedar leaves (Chamæcyparis thyoides), and *ī́djo máha*, 'deer potato' (Licinaria scariosa). The root of the latter is a bulb, and both this and the leaves are used. The song consists of five parts, the first word, with an invocatory significance, being varied in each. The intervals between the parts are employed in blowing into the medicine.

Formula: *Háfinonogī'ī hídjinomī'ī* (repeated a number of times).
He patters his feet. We see him.
djo míko lánudji
Little yellow deer chief.
hidjódjides yawákladi
we see him here he was lying
hī'ya ásasálgosan
here we run him
yahwī'łidálin omasdjē'
here he stood and wandered about

The other four verses of this song are the same as the foregoing, but the first line in each is different. Where *djo míko lánudji* 'little yellow deer chief,' stands in the first verse, the second has *ī́djo adjū́li* 'old male deer,' the third *ī́djo djofágana* 'yearling deer in his virile period,' the fourth *ī́djo kolá̤swa* 'mother deer,' [1] and the fifth has *ī́djúdji* 'little deer.'

4. Water Wolf the Cause (*Wíyogóf yahà alḗ dja*). The

[1] The modern colloquial word for 'mother' is *ítskī*.

water wolf causes nausea and gripes accompanied with dysentery. The root of sassafras (Sassafras sassafras), *wī́sū*, is the medicine used for this. The formula is sung as follows:

Dandayī' (repeated a number of times)
(?)
wīyogṓfạ
in the water
yahaláni
yellow wolf
ɬágwīlágāgadī
they are two big ones (?)
ɬīī^{s} *ilabátkin*
(?) on the shore
līī^{s} *isohṓseyē*
coming from ashes (?)
yosṓfa hī'ladi
in ashes he died
ī'ladi woᶜwoᶜ ohồ!
he died (wailing)
dándayì (repeated a number of times)
(?)

5. SNAKE THE CAUSE (*Tcítto alḗdja*). — Swelling cheeks, aching teeth and gums are caused by the water-moccasin (Ancistrodon piscivorus), *ahálasakáda*. About a handful of rotten wood, *ído lígwī* 'tree twigs,' and dried leaves, *ídiwísī'* 'tree hair,' are placed in the pot of water and receive the blowing before and after the verses of the following song:

nínoxkulúlwa dī [1]
in the path he was coiled up
dómahasokúlulut dī
on a long stick he was coiled up (?)
wiyófobákolulut dī
on the edge of the water he was coiled (?)
dīháksamóxkululut ogadī
around a tree branch he was coiled, it was said
dīhaugisókolúlut dī
on a hollow tree he was coiled up
sifsifkit os
he hisses
yilagà hágadì
lying he made a noise
djadáphadès
stone is in the grass

[1] The *x* occurring in these song texts is a soft palatal spirant.

hīyóxpidadä'git
(?)
yilagà hágadì
lying he made a noise
dómahásin
on a long stick (?)
īyoxpidadä'git
(?)
yilagà hágadì
lying he made a noise
nénahásin
in the sunny path
īyóxpidadä'gade
(?)
īyóxkololágade
(?)
yilagà hágadì
lying he made a noise
sifsk
hiss

(Prolonged hissing concludes the song)

6. Young Deer the Cause (*I'djo lowági*). — Swelling of the joints and stiffness of the muscles are caused by the young deer, born in the same season, or yearling deer, *ī'dúdjī*. Cedar leaves, *atcína*, are steeped in water and blown into four times between the verses of the following song:

īdjódjiyä
little deer
(call repeated four times)
īnádades
the game animals
lowágofan
when they are tender
tcafiknosīd
being healthy
atī'bofan
when they wander about

There are five more verses of this song which in their last three lines are the same as the last three of the preceding verse. Accordingly only the parts that are different will be given.

īdjódjides
the little deer

īláksides
his hoofs
(Repeat last three lines of preceding verse)
īdjódjīdes
the little deer
īsúksodes
his loins
(Repeat as above)
īdjódjides
the little deer
iłáfani
his back-bone
(Repeat as above)
īdjódjides
the little deer
īnádjides
his vital parts
(Repeat as above)
īdjódjides
the little deer
ī'gades
his head
(Repeat as above)
dogō !!! dogō !!!
(exclamation)
īdjódjiyä !!
little deer
$\bar{\imath}^{n}w\bar{a}^{n}$
(imitating cry of fawn)

7. WILDCAT THE CAUSE (*Katcalḗ dja*). — The different members of the cat family, *pósi* 'cat,' *kátca* 'wild cat,' or *koakúdji* panther, cause nausea and gripes. The medicine used with the formula is made up of a large number of plants and called *koákudjiliswa*, 'panther medicine.' This formula is repeated by the shaman with marked rhythm quite rapidly.

kátcalē'dja dì
wild cat was the cause
ī'ga łákko dì
head big
yū'bo łákko dì
nose big
ído łákko dì
face big

tółwa łákko dì
eye big
hátsko łákko dì
ear big
nógwa łákko dì
neck big
łátsi łákko dì
throat big
ifúlwa łákko dì
shoulder big
sákpa łákko dì
arm big
łátsi łákko dì
throat big
lī'dabíksī łákko dì
(?)
nádji łákko dì
teeth big
hókpi łákko dì
breast big
łáfaniłákko dì
backbone big
inátki łákko dì
his belly big
isúksī łákko dì
his buttocks (?) big
iháfī łákko dì
his thigh big
īnadjala hidì
(?)
sákpadjalá hidi
arm (?)
hádjidjalá hidì
tail (?)
hadjifana łīdjadì
under the tail bone

There are two more verses of this formula which are different from the above only in the first word. The second verse begins, instead of with *kátcalē'djadī* 'wild cat the cause,' with *koákudji łákko* 'panther big,' and the third has *pósi łákko* 'cat big.'

8. Spirit the Cause (*Poyafikdja alē'dja*). — The spirits of the dead, who have not reached the home of the spirits but who wander about the earth, cause fever in its various forms.

The medicines steeped by the shaman for this trouble are given as *kofátska* and *ahálbakstcè*, and were unable to be identified. The medicine is given a blowing between the eight verses which are sung. The first words of address are different in each verse, but the rest of each is the same :

djidjiwehegī (repeated a number of times)
(?)
djitskī *īladī*
your mother is dead

The other verses have the following words after the repetition of the meaningless introduction.

djīyóban
(?)
djiłkī
your father (clan brother)
djīłáha
your elder blood brother
djīdjō'si
your younger clan brother
djīdjiłwa
your clan sister
djitskúdji
your little mother
djibáwa
your mother's brother
djībó'si
your grandmother
djībō'dja
your grandfather

The song ends with the following :

talókilíns
(?)
djiłā'fạni
your backbone
wogódjweīdjayándomī
(?)
djīgā'fạni
your skull

9. BEAVER THE CAUSE (*Itcā'swalē'dja*). — Constipation and soreness in the abdomen are caused by the beaver. *Akhátka*, 'in water white,' probably black willow (Prunus nigra), and *adjila-*

láska, probably a tulip variety, are the roots used in the preparation of the medicine. Four songs of the formula were recorded, each addressed to a different animal believed to be, in the native classification, related to the beaver; namely, the otter, a species of weasel, and a small weasel, probably the ermine.

lä'gadihī' *ónabahà*
he was sitting (?) (?)
wahála ᵋahà
south
djā'di ᵋahà
red
ītcáswa ᵋahà
beaver
ilī'dja ᵋahà
he kills
iliá ᵋahà
he dies

There are four verses of each song having the only difference in the first two words which indicate the cardinal points and their color symbolism.

hasakalátka	*ᵋahà*	*làni*	*ᵋahà*
west		yellow	
honīła	*ᵋahà*	*lasti*	*ᵋahà*
north		black	
hasō'sa	*ᵋahà*	*hatki*	*ᵋahà*
east		white	

The second, third, and fourth songs are the same as the first except that they substitute for the word *ītcáswa* 'beaver,' *osā̆nna* 'otter,' *hoksútko* 'weasel' (species), and *sagĭ̆pa* 'ermine,' 'stoat,' respectively.

10. Bird the Cause (*Fúswalĕ'dja*). — Birds cause nausea, gripes, and diarrhea. A bird's nest of any kind, *fús imbognága*, is steeped in the water as a medicine which receives the blowing before and after the song. It is sung four times.

hágidosī' (repeated a number of times)
they chatter
hágidáłitógi hagī'
they chatter and flitter about
hágidosī' (repeated a number of times)
they chatter

idą́lwa lä'git áyamó
their settlement is here
fulótkit *áłidogī*
gathering together they make a fluttering noise
djil djil
martin
tins ti^{n}s
(in imitation of the cry made by *tasi*, bluejay)

The following diseases and antidotes are given without the song and formula texts as they have not been completely translated and recorded:

11. FISH THE CAUSE (*Łáło alēdja*). — Insomnia is caused by the various kinds of fish, and the plant used in the cure is *hílis hátkī* 'medicine white,' ginseng root (Panax quinquefolium).

12. SNAKE HUNTING MEDICINE (*Tcítto hilíswą isfága*). — Swellings on the face and limbs are caused by snakes. The herb used in curing them is cedar leaves, *atcína*.

13. TURTLE HUNT (*Hilúdja fága*). — A cold in the lungs, with coughing and sores on the limbs and neck, is caused by turtles. A handful of wild-cherry bark (Prunus ?), *tofą́mbī*, is boiled and sweetened to be drunk.

14. BEAR THE CAUSE (*Nókusi alḗdja*). — Bears cause nausea and diarrhea. The whole plant of *wīlána*, 'in the water yellow' (Chenopodium anthelminticum), is soaked in water and given to the patient.

15. HORSE THE CAUSE (*Łákko alḗdja*). — Swelling of the abdomen and numbness are caused by horses. A drink is made of four corn-cobs, *tálabī*, about four inches long, soaked in water.

16. ALL THE SNAKES (*Tcítto súlga*). — Swellings on the legs, possibly rheumatism, producing serious lameness, are caused by a large mythical snake about twenty feet in length with horns on its head. The medicines used in treating this disorder are the roots of *akhátka* 'in water white,' *akdjilaláska*, *akwą́na* (?), and *ído lígwī* 'tree stems.'

17. RACCOON THE CAUSE (*Wótko alḗdja*). — Insomnia and melancholy are caused by the raccoon. The plant used by the shaman is *tohíligo*.

18. HOG THE CAUSE (*Súkha alĕ́ dja*). — Indigestion is caused by the hog. The whole plant of *súkha hátsko* 'hog ear' (Hieracium scouleri) is used by the shaman to cure it.

SHAMANISTIC CONTESTS. — It was not uncommon formerly for shamans to hold contests to determine their superiority. Trials of this sort were also the occasion oftentimes of meetings with other tribes from which disputes arose. One of these, a translation of which is given, is still remembered by the Taskigi. In the old days the Creeks and the Osage used to have many contests between their shamans, endeavoring to outdo each other in magic tricks. So one time a meeting was arranged between the two people for the purpose of conducting one of these trials on a stretch of prairie a little north of Tulsa, Indian Territory. It was near Bird creek. The Creek shaman of the day was Pofkadjuli, a Creek mulatto. The Osage had a great man, and each tribe was expecting that its shaman would surpass his rival.

In the morning they began. The Osage shaman did a trick. He danced and mumbled and performed a wonderful exploit. But when Pofkadjuli got up on the space where the contest was taking place, he did one just as good as the Osage's. Then the Osage did another. Pofkadjuli equaled him. The Osage did another, but Pofkadjuli equaled him again. And so it continued. Now, the Osage kept performing better ones all the time, and the Creeks began to think that Pofkadjuli was going to lose after all. At last the Osage made medicine and performed a feat that could not be excelled. Then it was Pofkadjuli's turn. He went out to the plot in the center and began dancing all around the Osage, singing and enchanting, and all the time closing in on the Osage shaman. Suddenly, just as he was in front of the latter, he jerked up his blanket from behind and swung his back around toward the Osage. Immediately a swarm of bumblebees poured from beneath the blanket and crowded about the Osage's head, driving him headlong from the field.

Religious Beliefs and Ceremonies

The principal religious ceremonials of the Taskigi, as well as of nearly all the Creek tribes so far as is known, center about the celebration of the corn harvest. As the cultivation of corn is one of their chief occupations, their religious activities are highly concerned with this important product. When the crop has about reached maturity a time is decided upon by the town chief for the celebration. Before this no one uses any of the grain for food, because it is thought necessary for the presiding supernatural being to be properly propitiated beforehand. The origin of the ceremony, or ceremonies, in which this is accomplished is ascribed to the being called Hīsákidamissī, freely rendered, 'Master of Breath' (*hīsákida* 'act of breathing,' *imíssī* 'its controller'). In how far this concept has been influenced by Christian ideas in former times it is now impossible to say. As no other culture-hero, in the broadest sense of the term, is remembered at the present day by the Taskigi, all creations, when thought about at all, and nearly all reasons for the existence of things, are simply attributed to Master of Breath. It is significant in this connection, however, that Hawkins says of the Creeks, referring particularly to Kawita and Kasi'ta towns, that they derived their ceremonies, and fire also, from four deities, Hiyouyulgee (*Hayayálgi* 'light people,' or *Hayálgi* 'teachers'), who appeared from the sky and after instructing the people in the rites and the plants to be used in them, returned to the upper regions in a cloud. The Taskigi, on their part, claim that Master of Life enjoined upon them the necessity of following the harvest ceremony to insure the continuance of the crops and their existence upon the earth as a people. They attribute their present decline naturally to their failure in maintaining the ceremony.

The annual ceremony of the corn harvest is called *Páskida*, 'act of fasting' (mentioned by early writers under the form *Busk*), from the fact that no corn is eaten until it is over and that going without certain foods is a part of it. Upon the same occasion the clan totems and other animal spirits are worshiped and propitiated by numerous dances each with its own song and

gestures. These address prayer and express gratitude to the propitious ones and correspondingly placation to those that are believed to be nocuous. To take an example, the *stikínī*, 'little screech owl,' is an unfavorable spirit of the dead, causing death or announcing death to the one who hears it. So the *Stikínobaṇga*, 'Little-screech-owl dance,' is functionally a prayer to the screech owl for immunity from its visits. These dances are performed publicly on the square ground and all spectators may take part freely. In other cases dances are directed, as acts of worship by emulation, to the spirits of animals whose flesh is eaten so that they will not become averse to being killed for food. The emulation is believed to affect the spirits of the dead animals in their reincarnation upon the earth. So with the Fish dance, Buffalo dance, and others.

As many of these game animals are also clan totems it is to be expected that the members of the Fish clan, for instance, when the Fish dance is being performed, are the most concerned, since they are the descendants and kinsmen of the fish. Whether participation in such a dance was formerly restricted to the members of that clan alone, the Taskigi cannot say. The extension of the animistic concept over acculturated objects, such as the chicken, horse, mule, and gun, which contribute to daily existence in the same way as other animals and objects, has stimulated the invention of the Chicken dance, the Mule dance, the Horse dance, and the Gun dance, since the advent of the whites.

A list of the dances performed at the last ceremony a number of years ago is as follows :

Skunk dance, *Kúnobaṇga.*
Gun dance, *Tabótskobaṇga.*
Mule dance, *Bai'kobaṇga.*
Alligator dance, *Halpádabaṇga.*
Duck dance, *Fútcobaṇga.*
Buzzard dance, *Sūlibaṇga.*
Horse dance, *Tciłákkobaṇga.*
Rabbit dance, *Tcófibaṇga.*
Fish dance, *Łáłobaṇga.*
Drunken dance, *Hā'skobaṇga.*
Leaf dance, *Tiwísībaṇga.*
Skeleton dance, *Istífánibaṇga.*
Crazy dance, *Hådjobaṇga.*
Buffalo dance, *Yánasobaṇga.*
Chicken dance, *Tolósobaṇga.*
Screech-owl dance, *Stikínobaṇga.*
Long-eared owl dance, *Óbobaṇga.*

Besides these were the Ball-game dance, *Pokídjīda obą́nga*, to invoke supernatural aid for the players in the ball game, and the Steal-each-other dance, *Dihoł́hópkobą́nga*, where men and women ranged in opposite lines on the square ground and the men tried to snatch the women from the opposite line. This latter is regarded as a pleasure dance. Much licentiousness followed it. Another, known as the Crazy dance, was the provocation of unusual intimacy between the sexes, in which the men made obscene motions and came into bodily contact with the women in circling about the fire. During this dance, and for a short time following, sexual intercourse was promiscuously indulged in, without reprehension, by the spectators and the dancers. Nothing was carried on, however, by force intentionally.

A collection of Taskigi dance songs was made on the phonograph as sung by Kabitcīmáła (Laslie Cloud), but as they have not yet been analyzed litttle can be said of them. They exhibit some variety in melody, while the rhythm is mostly in twos, in accordance with the drumming which follows or determines the regular stamping step of the dancers, with the weight on the first beat. The songs are divided into stanzas, at the end of which the dancers whoop or imitate the cry of the animal invoked by the dance. To a certain extent the dances are imitative in posture, gesture, and step. The last, however, is about the same in all the dances, being a shuffling advance with first one foot then the other only slightly raised from the ground, then brought down with vigor. A leader, or sometimes two leaders, heads every dance and sings the first period, consisting of a few words. Then the followers repeat after him a stanza of equal length or a few syllables only, as the case may be, thus producing a rather harmonious alternation. The majority of the dances take place around the fire in the center of the town square, and the direction of movement is from right to left. In the latter days dance regalia has been abandoned, but probably was used earlier. A stuffed buffalo's head used in the Buffalo dance was the last mask to survive.

Musical accompaniment to the dances is produced by a hand-

rattle in the hand of the dance leader, and in many of the dances four women were brought in with dried terrapin shells, having pebbles in them, strapped to each leg below the knee, which produced another heavy rattling sound. The place of these women was just behind the leader or leaders. The drum was also indispensable in most of the dances. This was a hollow vessel partly filled with water and stood near one of the lodges on the square-ground where it was beaten by a specially detailed person.

The foregoing remarks are true in regard to the majority of special dances, but there are other elements of the annual ceremony which can better be described in their order of occurrence.

ANNUAL HARVEST CEREMONY (*Páskida*, 'Act of Fasting'). — The ritualistic events which marked the annual ceremony occurred in a regular order on certain days. When the town chief considered the corn crop to be about ready for harvesting, he appointed a day for the town to assemble. On this day they performed a few dances for pleasure and cleared off the top layer of soil from the square ground, heaping it in a pile near the southeast corner. This heap of sacred soil symbolized the earth. The lodges about the square were put in good order and their roofs repaired with a new covering of branches. And finally each family departed home with a bundle of small shaved sticks — one for each day before the ceremony. These were distributed as a tally by the town chief.

The *first day* found the families of the town encamped about the town square. The town chief occupied his seat, consisting of a hollowed-out trough-like log filled with leaves and covered with a robe, in the west lodge. With him in this lodge was seated the *hínīha łákko*. The northern and eastern lodges were occupied by the warriors and with them the *tastaṇágī łákko*. The southern lodge was for women and children, and spectators from other towns (see diagram, page 112).

On this day the use of salt in food was under a strict taboo until the ceremony was completely over. In the morning two men, who had their faces colored black with soot, visited a place in the woods where they had previously dug some red root

(Salix species ?), *míko huyaní dja* 'chief physic.' Two others were appointed to secure the button snake root (Eryngium yuccæfolium), *pā́sạ*. These two roots were sacred plants given to the Taskigi by the Master of Breath as purifiers and insurers of good health in being free from possession by harmful spirits. When these men returned with the plants they announced it by singing and whooping. The rest of this day was spent in dancing the various dances before described. In these dances a peculiar arrangement was made whereby someone besides the actual leader was enabled to learn the songs. A man was invited to dance at the leader's side and repeat the song with him, in that way gradually committing it to memory. The line of dancers was then double, men and women often being side by side. The Crazy dance and the Drunken dance were much favored at this time.

CRAZY DANCE (*Obánga hā́djo*). — This is a favorite dance, wherein the leader often improvises witticisms. Amusement is its chief purpose.

LEADER	CHORUS
tcíłakko baíxka[1]	*ámo'padédjes*
my mule	saddle him for me
háyapołákko	*djólädjiófạn*
big prairie	when we get there
yánasatcifákna	*ílīdja ófạn*
young bull elephant	when I kill him
tcáhaíwa ítskī	*ténhombīófạn*
my wife's mother	when we eat together with her
tcáhaniófa	*wásasī míkko*
when she will scold me	Osage chief
ínhadixsinófa	*wā'sasosạ́lgi*
when I become his son-in-law	many little Osages (children)
ódjutskaiófạn	
when I make them	
háyadidjałákka	*hā'djahalwadjófa*
great morning star	when it is rising
pínadjadjahóga	*djā'hoginpóxhät*
old turkey gobbler	when I hear him gobbling
ámīdjalíska	*ạ́ngałonáyid*
my old gun	I start with it on my shoulder

[1] The *x* occurring in these songs is a soft palatal spirant.

ayíxbit
I'll go along
ítoładjiłákko
on limb of big tree
ídohwī'łan
on tree standing there
hásmīlä'yät
I'll point my gun at him
łahä't *ilidjätłółut*
when I shoot him, I kill him, returning
łáidjogósdjät
I'll take it on my back
tcáhadjawą́lgi
my sisters-in-law
dinhombiófa
when we eat it
sidibóhin
when they get fighting
ándalogī'bit
I'll eat it all myself

ī'łołaiófa
when I get there
hixdjät
I'll see him
icíxjät
I'll see him
īdjä'hät
I'll shoot him
tcā'haiwa ítskī
my wife's mother
łī'salagaófa
when I get there
pínhokpīabíswa
turkey breast meat
sídihanīófan
when they begin quarreling
isnafä'kät
when I knock them about

Drunken Dance (*Hā'skobąnga*). — Men and women dance. The men jostle and grab the women in an obscene manner. This dance is followed also by wantonness. It is a great favorite. The leader sings the song, followed by several women with turtle-shell rattles fastened below their knees. The replies he makes are supposed to be given by a woman, but she does not speak. The leader can vary the words to suit his fancy. It is rather a difficult matter to describe the religious function of the Drunken dance and the Crazy dance. They are explained nowadays as being chiefly for pleasure; but there is some connection in the minds of the Indians with procreation and the supernatural beings who control childbirth.

(A) *yowáhi yą̀*
hólena wè
hégaya kai yó wali (repeated a number of times)

gìłago *djahádji*
I don't know anything I am drunk
nàk homi *temìski*
something strong we drink with each other
ìstama *he dohàks*
something wonderful is it not?

(B) *wehéyona* *hahwébage* *djakédjiba*
let us go they say to me
djahésigo
I have no husband (supposed women speaking)
djíndaba łamónäyas
tell me where your bed is
djihą́de nene łamónäyas
tell me where is the road to your home
nohē'yale (repeated a number of times)

(C) *djì'hi waka* *súmhogi áłis*
my husband lies down (I will) run away from him and wander about
djéhe läga *súmhogi áła*
my husband stays home (I will) run away and wander about
djáhe läga *súmhogi áłis*
my wife stays home (I will) run away from him and wander

(D) *hoyawē'* (repeated a number of times)
yoligō' yanohē' (repeated a number of times)
łisa lą̀'gosin *tcinhą̀sin*
when the moon rises I'll cohabit with you

(E) *yá* *nade gą́n*
here the entire abdomen
náłkaba dègosin *tcinhą̀sin*
in the center of the body I'll cohabit with you
nódja łis *niłi* *hámgosäs*
I'll sleep with you night just one
níni *dímbosäs*
road close to
niłi *óstosäs*
night just four
djógo lískosa *niłi* *pálosäs* *łis nódjäs*
that old house night just ten I'll sleep with you

(F) *holinàwe^{s}eye yohalē' we^{s}ehe* (repeated number of times)
éhe déb kadjoks *djikai hodji kai hosa*
husband will whip her they say of you, they say of you
éhe náfkadjoge *djigē' hodjigē' esa*
husband will strike you they say of you, they say of you
djinhokoígesa *djigē' hodjigē' esa*
he will call you they say of you, they say of you
héhenoē'gesa *djigē' hodjigē' esa*
when you are called they say of you, they say of you

The *second day* was the most important one. The medicine plants were now steeped each in its own pot, by the two attendants who obtained them, as the first step in the approaching ceremony. Then the principal shaman of the town blew through

a hollow cane into the medicine, repeating at intervals a formal ritual. This procedure was kept up until nearly noon. On this day nothing could be eaten by the men. When the medicine had become properly conjured the town chief and the other occupants of his lodge advanced to the pots, where they stood before the lodge, and drank about a quart of the decoction each. Then the occupants of the western lodge took their drink, then those in the northern lodge, and lastly the women and children in the southern one had their turn, but they washed only their hands and heads in it. After this the women engaged in dancing, generally performing dances similar to those performed by the men.

On the afternoon of this day the drinking was continued, the intervals between drinks alternating with the *Táfosobaṇga*, 'Feather dance.' For this important dance wands about six feet long were brought out from the chief's lodge, each of which had a number of white heron feathers attached to it. These feathers were obtained and the wands made with a certain ritual. A shaman had to make them, as he was the only one who could handle the feathers with impunity. From the time when he commenced making the wands until they were finished he had to fast. The dancers who used them usually paid him something for the wands and the receipt was shared with the town chief. Only the feathers of *wágohátkī*, white egret, snowy heron, or wood ibis could be used, and the Taskigi never molested or handled this bird for any other purpose. The dance is said to be in honor of the feather, an important white fetish which shields the people from the attacks of human or spiritual enemies. White is symbolic of peace.

At the end of the second stanza of the Feather-dance song the men, who held the feather wands, whooped and rushed in a body first to the western lodge where the town chief was. They stopped suddenly before this lodge, raised their wands high, then stuck them in the ground. This took place successively in front of each lodge on the square ground at the end of each new song, and before the occupants of that lodge took their drink.

After the drinking it did not take long for the medicine to act. The men vomited profusely upon the earth floor of the lodge where they sat. One informant stated incidentally that on certain occasions four women were allowed to take the emetic.[1] The emetic was taken as a propitiatory purification to the Corn deity, and was, with the rest of the rites, instituted by Master-of-Breath.

After the ceremony of the emetic was finished the town chief swept away the pile of ashes from the previous fires in the center of the square ground and fresh wood was brought up. He then kindled a new fire with fresh material and sparks from it were carried by the women to their various domestic hearths from which the old fire had previously been brushed away. This new fire event instituted a new period of time in their religious reckoning, corresponding in a sense to a new year. After this all personal differences, previously standing unsettled and liable to provoke disputes, were effaced and everyone began a new season of peace and friendship. The participants, and in fact all the townsfolk, wore their best new clothing, and all old and damaged property was put out of the way. Some time during this day a formal speech of encouragement to the participants was made in public by the town chief.

From this time on the afternoon was spent in dancing as described before, and the same method for a novice to learn the songs by dancing beside the leader was employed. The dances were then open to all who desired to participate therein for the sake of securing the benefits derived from pleasing the supernatural beings, or for the purpose of obtaining supernatural favor for the town. Strangers from other towns, and even tribes, were invited to participate.

Some time before sunset, however, the racket ball game was

[1] It was learned that the Creeks of Hickory Ground town near Henryetta, Oklahoma, allow the women to take the emetic. The first day of the ceremony here is given over to dancing, the second to the taking of the emetic, and the following night and the third day to dancing incessantly without partaking of food until that afternoon, according to one account. For the various elements in the harvest ceremony of three or four other towns, see Bartram, Hawkins, Swan (in Schoolcraft), and Gatschet, above cited.

played. The game is still played by the Taskigi, but it has been stripped of its ritual and is done nowadays solely for amusement and betting. Only a very brief description of this wide-spread game, *pókidjīda*, will be attempted. The players each have two sticks with a netted scoop at the end with which to catch the ball. The ball is made of deerskin stuffed with deer-hair, and in its center is a fetish. The goals are horizontal sticks supported on poles about 12 feet high, set 150 yards apart. An equal number of players is on each side, divided into three groups to the side. One group guards its goal, the other holds the center of the ground, while the third is halfway between them. The ball is thrown up in the center and the players then strive to throw it with their sticks through the opposite goal. It is then called "killed." Foul play by touching the ball with the hands necessitates throwing it up again. Twenty goals scored on either side wins the game. Each side used to conjure the opponents' goal with the help of a shaman. If they could get a pregnant woman to pass around the goal sticks it was considered a great piece of luck as it would impair their enemy's running powers. It is likely that most of the rites connected with this game in the neighboring tribes were formerly shared by the Taskigi.[1] Sometimes the men played against the women and then all used their bare hands.

Serious injuries often resulted to the players after these games, and bad feeling between towns engaged in a game frequently resulted from misunderstandings or foul play. On the other hand the ball game is the occasion for squaring accounts between individuals and towns, and even takes the place of minor warfare, as related in the following :

"Kasi'ta town and Kawita town are always at odds, especially in the ball games. There is an old story to account for this. Once when the Kasi'ta men were away hunting, the Kawita men went over there and raped all the Kasi'ta women. So thereafter the Kawitas call the Kasi'ta women their wives, and the Kasi'ta men are angry."

[1] For a description of the Cherokee game, see Mooney in *American Anthropologist*, III, 1890, p. 105, also Culin in *Twenty-fourth Rep. Bur. Am. Ethnology.*

After the ball game, the men of the town proceeded to the nearest water where they plunged in and washed off all their paint. Before sunset the people all indulged in a feast of corn and other vegetables, and those who had not eaten since the beginning of the ceremony broke their fast as well. The taboo of salt also ceased forthwith.

The ensuing night was spent in dancing as before, amid great relaxation from the strain of the occasion. Ribaldry and licentiousness made this an uproarious night — so much so that it was expected for those of the women who were not wantonly inclined to remain away from the square-ground.

By sunrise on the *third day* the families who had come from a distance began to return to their homes, and the others rested to recover from their fatigue and excesses.

After a lapse of four days, that is, on the *seventh day* from the commencement, it was customary for the town to reassemble at the square-ground for another medicine drinking. This occasion was more informal than the first, and on it the red-root was taken "cold," as they say, meaning without the formal ritualistic accompaniments.

At other times of the year, when desired, the various dances of the annual ceremony were irregularly performed in the evenings when the villagers were gathered in the square-ground. But this was possible only in the old Creek country where the town was more compact. The regular attendance at these dances of all the families for the good of the town was thought necessary only at the harvest time and the new-fire rites.

As a final word in regard to the rites of the Taskigi town and the beliefs connected with them, it may be expected that there has been some interchange of ideas with the Yuchi Indians, in close proximity to whom the Taskigi have lived since their removal from the East.

MYTHS

Only a few mythical texts[1] and translations were obtained from the Taskigi. From these and other prevalent beliefs which

[1] The texts are reserved for future presentation, before which time, it is hoped, a larger number can be procured.

are current among the people but not preserved in any connected form, a partial view of early Creek concepts can be derived. The whole myth fabric of the tribes of the Southeastern group seems to be made up of elements showing close similarity. So the tales and myths from Taskigi town have many cognates in the myths of the other Creek tribes, as well as of the Yuchi, Cherokee, and Choctaw.

In brief, there are several classes of myths among the Creeks. In a rather loose way the first origin of the earth is ascribed to the animal spirits of the sky-world independent of any other agencies. Another class deals with the period when Master-of-Breath effected his innovations on the then existing creatures and made things on earth as they are now. The Creeks assert that they were made from the red earth of the old Creek nation. The whites were made from the foam of the sea. That is why they think the Indian is firm, and the white man is restless and fickle.

But the majority of tales refer to animal trickster events in which Rabbit is the chief actor. These include many of the elements which are found widely distributed over the eastern and central portions of the continent. Among the tales of what are called "the old times" there are a number in which the stupidity of their human ancestors is shown in a ludicrous sense, and these are great favorites, being called *hoboťinigōd*, 'senseless.' Many of the other tales seem fragmentary and aimless. The ones given are all from Taskigi town, but they offer, on their part, nothing particularly characteristic or new. The collection is so fragmentary, however, and belongs so intimately to a complete whole to be found throughout the Creek Nation, that the discussion of Creek mythology should be deferred until a general and more comprehensive collection from its various branches has been made.

Origin of the Earth

The time was, in the beginning, when the earth was overflowed with water. There was no earth, no beast of the earth, no human being. They held a council to know which would be best, to have some land or to have all water. When the council had

met, some said, "Let us have land, so that we can get food," because they would starve to death. But others said, "Let us have all water," because they wanted it that way.

So they appointed Eagle as chief. He was told to decide one way or another. Then he decided. He decided for land. So they looked around for some one whom they could send out to get land. The first one to propose himself was Dove, who thought that he could do it. Accordingly they sent him. He was given four days in which to perform his task. Now, when Dove came back on the fourth day, he said that he could find no land. They concluded to try another plan. Then they obtained the services of Crawfish (*sákdju*). He went down through the water into the ground beneath, and he too was gone four days. On the fourth morning he arose and appeared on the surface of the waters. In his claws they saw that he held some dirt. He had at last secured the land. Then they took the earth from his claws and made a ball of it. When this was completed they handed it over to the chief, Eagle, who took it and went out from their presence with it. When he came back to the council, he told them that there was land, an island. So all the beasts went in the direction pointed out, and found that there was land there as Eagle had said. But what they found was very small. They lived there until the water receded from this earth. Then the land all joined into one.

The Origin of Clans

The old-time beings were gathered together. They began acting in different ways and showing different qualities. Master-of-Breath observed them. Some began jumping upon trees and running about. Someone asked, "What sort of beings are those?" "They are like panthers," someone answered. "Henceforth they shall go about as panthers," said Master-of-Breath. Then again, some began leaping and running. "What are they like?" some one asked. "Like deer," was said. "Henceforth they shall go about as deer," said Master-of-Breath. Then again, some went hopping high among the leaves of trees and alighted on the branches. "What are they like?" asked

somebody. "Like birds," someone answered. "They shall be birds," said Master-of-Breath. Then again, some were very fat and when they walked they made a great noise on the ground. "What are they like?" asked someone. "Like bears," was the answer. "They shall be bears, then," said Master-of-Breath. Then again, one started off to run but could not go fast. When he came back he had black stripes near his eyes. "What will that be?" was asked. "It is like a raccoon," said one. "That kind shall be raccoons," said Master-of-Breath. Then one was so fat and round-bodied that when he started off he could hardly walk. "What is that kind?" was asked. "It is like a beaver," someone answered. "They shall be the beavers," said Master-of-Breath. Then again, one kind was fat and could not run very fast. When this one had gone off to a distance and returned, someone asked, "What is that like?" "Like a mink." "They shall go about as minks," said Master-of-Breath. Then again, one was very swift when he started to run. He darted back and forth very quickly. "What is he like?" was the question. "Like a fox," came the answer. "That kind shall be foxes," said Master-of-Breath. Then again, one was very strong and could pull up saplings by the roots. He went off to a distance and returned. Then someone asked, "What is he like?" "Like the wind," was the answer. "That kind shall be wind," said Master-of-Breath. Then again, one started off into the mud. When he had come back out of it, someone asked, "What is he like?" "Like a mud-potato," was answered. "Such shall be mud-potatoes," said Master-of-Breath. Then again, one of them had short legs, and his back was covered with ridges. When he started out and returned, someone asked, "What is he like?" "Like an alligator," was the answer. "That kind shall be alligators." said Master-of-Breath. Then again, one with stripes on his back went running off, and when he came back, someone asked, "What is he like?" "Like a skunk," was the answer. "That kind shall be skunks," said Master-of-Breath. Then again, one went away jumping, and when he came back to the starting place, someone asked, "What is he like?" "Like a rabbit,"

was the answer. "That kind shall be rabbits," said Master-of-Breath. Then again, one went off squirming along on the ground. When he returned, someone asked, "What is he like?" "Like a snake," was the answer. "That kind shall be snakes," said Master-of-Breath.

Master-of-Breath, after he had given them their forms on the earth, told them not to marry their own kind, but to marry people of other clans. All the red people know what clans they belong to and do not marry in their own clan. If they did they would not increase.

Origin of Diseases and Medicines

The old people, our Maskogi ancestors, were gathered together in the olden times. The deer said that he was the cause of a sickness. So he made the medicine for its cure. The panther said that he was the cause of one. It was he, then, who made the medicine for that trouble. Then again, the bear was the cause of one. He said that he made the medicine for that. Then the snake caused one, and made its medicine. Then again, the hog said he was the cause of one, and he made the medicine for it. The bird was the cause of one, and he made the medicine for it. Then again, the wildcat was the cause of one, and he made the medicine for it. Then again, the horse said that he was the cause of one, and he made the medicine for it. Then the beaver said he was the cause of one, and made the medicine for it. Then again, the dog said he was the cause of one, and made the medicine for it. Then again, the otter said he was the cause of one, and made the medicine for it. Then again, the fish said it was the cause of one, and made the medicine for it. Then again, the game animals said they were the cause of one, and made the medicine for it. Then again, the water animals said they were the cause of one, and made the medicine for it. Then again, the animals of the sea-shore said they were the cause of one, and made the medicine for it. Then again, the animals in the sea said they were the cause of one, and made the medicine for it. Then the snake tribe said they were causes and made medicines for

them. Then again, the animals-moving-about-in-the-water said they were causes and made medicines for them. Then the small-living-things-in-the-water said they were causes and made medicines for them. Then again, the raccoon said he was the cause of one and made the medicine for it. Then the white-hog (opossum) said he was the cause of one and made the medicine for it. Then again, the sky-hog said he was the cause of one and made the medicine for it. Then again, the rainbow said he was the cause of one and made the medicine for it. Then again, the spirits of the dead said they were causes and made medicines for them. Then again, the different kinds of dirt said they were causes and made medicines for them. Then again, new-fire-when-it-is-cold said it was the cause of one and made the medicine for it. Then again, the buzzard said he was the cause of one and made the medicine for it. Then again, living-people said they were causes and made medicines for them. Then again, the turkey said he was the cause of one and made the medicine for it. Then again, the wolf-in-the-water said he was the cause of one and made the medicine for it. Then again, the land-wolf said he was the cause of one and made the medicine for it. Then again, the deer said he was the cause of one and made the medicine for it. Then again, the rattlesnake said he was the cause of one and made the medicine for it. Then again, the owl said he was the cause of one and made the medicine for it. Then again, what-is-inside-of-me said he was the cause of one and made the medicine for it.

Rabbit and Tar-baby

Rabbit and Wolf were friends, they say. Rabbit used to drink out of a well, but he would stir up the water till it was muddy. Then they wanted to kill him for it. To catch him they made a man's image out of pitch and set it where he came along. The rabbit saw the image of the man. He came up close, and said, "Get out of my way!" It did not move. "Out of my way, I told you; I'll kick you!" he said. But it did not move. He went up and kicked it. Then his foot got stuck. "Let go of me!" he said. "I'll kick you with my

other foot!" He kicked again with the other foot. It got stuck, too. "Turn me loose, or I'll hit you with my hand!" said he. He hit him, and his hand got stuck. "Turn me loose, or I'll hit you with my other hand!" he said. He hit him with that, and it stuck. Then he said, "I'll butt you again with my head, that is left me, if you don't turn me loose!" The image of the man did not loose him. He struck him with his head, and that got stuck. Then he was caught.

Rabbit Outwits Wolf

Now we'll start with this. Rabbit had played so many tricks on everybody that they wanted to kill him. They set out to get him, and at last caught him with the image of a man made of pitch and tied him up in a bag. Then they held a council to decide what they should do with him to be rid of his mischief forever. At first they said, "Shall we throw him in the river or shall we burn him in the fire?" But Rabbit called out from the bag, "O, don't put me in the fire, but throw me in the river! The fire is terrible; it will burn me to ashes; O, throw me in the river!" He did not want them to throw him in the river because he knew he would be lost. But he thought that if they threw him in the fire the bag might burn so quickly that he could jump out and run away. So he howled that way. Well, they did not know just what to do. Some of them put stones into the bag to make it heavy before they threw it into the river. But they did not decide yet. As it was getting dark they thought it would be better to wait until morning and dispose of him then. So they left him in the bag by the shore and went home. Rabbit did not know what to do.

In a short time Wolf came along that way and Rabbit called to him, "Aha, brother Wolf!"

"Aha!" answered Wolf, "what are you doing in that bag?" Wolf and Rabbit were friends in those days.

"Oh!" said Rabbit, "They caught me and told me that I must eat up four little boys. But I can't do it, and so they are going to throw me into the river to-morrow. Oh, what shall I do! I can't eat up boys!"

"Why, that's easy. I like to eat them up. It makes me hungry even now, said Wolf."

"What shall I do!" cried Rabbit from the bag.

"You let me get in that bag," said Wolf; "I'll show them how to eat up boys!"

Well, Rabbit was willing, so he told Wolf to undo the fastenings. Then they changed places. Rabbit got out and Wolf got into the bag, and Rabbit tied up the bag again. Then he ran away as fast as he could.

The next morning they came to the place to kill Rabbit in the bag. They noticed that it was a little larger than it was the night before, but someone said, "Never mind that!" Then they decided to throw him into the fire. Wolf did not like that, but he said nothing. They put a lot of wood on the fire, and when it burned high they threw the bag on it. It was very hot and Wolf got burned all over, but he managed to jump through the bag where it burned away. Everybody was so surprised at seeing Wolf that they could do nothing, and he dashed away into the woods. He immediately set out to find Rabbit who had thus fooled him. He was going to kill him. Wolf was very badly burned and very angry, and soon he found Rabbit's trail and started in pursuit.

Now, after Rabbit had gone some distance, he looked back. He knew that Wolf would be on his trail. Before long he did see Wolf coming along on his trail and catching up with him, too. So Rabbit crept into a hollow log and lay still.

Pretty soon Wolf came to the place where the log was, and as he was very tired and worried by his burns, he sat down right over where Rabbit was concealed. Then he began to complain about his bad luck: "Everything is against me. All my friends are trying to injure me, and I am deceived and my life is threatened. Ah, if I only could find that Rabbit, I would make him pay for this!" He was whining and complaining. The part of the log where he sat was just over a hole that reached down into it, and from where Rabbit lay he could see up to the buttocks of Wolf. Then he reached up with his claw and tickled Wolf's testicles a little. "Worse and worse!" said

Wolf, "Everything is against me. Even the ants have to torment me. How they scratch! And I am all burned too! If I could only find that Rabbit!" So Wolf moved a little to avoid what he thought was the scratching of the ants. But he was over the hole in the log yet, and soon Rabbit could do nothing but tickle him again in the same place. "Will those ants ever let me alone!" cried miserable Wolf. Then he got up and looked into the hole to see where they were, and he was able to see just a little of Rabbit inside the log. "Now I've got you, you trickster! And it was you who would still torment me! I'll soon fix you! Come out of that log!" cried Wolf. But he could not get Rabbit out. So he said, "I'll go and get an axe," and went to a house near at hand, but they would not lend him an axe. Now, while he was gone Rabbit came out of the log and ran on, in another direction. When Wolf returned to the place, he found that Rabbit had escaped. So he set out on the trail as fast as he could, vowing that he would not let the rascal escape again. At last Rabbit found out that Wolf was gaining on him, so this time he crawled into a hollow tree and got up a little way from the ground.

Pretty soon Wolf came along and tracked him to the tree. "Now I've caught you again, you trickster, but this time you shall not escape! I will surely kill you now!" said Wolf. While he was thinking what to do next, Heron came along. Then Wolf told him that he had Rabbit secure in the hollow tree, and he got Heron to agree to help him. They thought that they would surely kill the mischievous Rabbit this time. "Now," said Wolf to his new friend and helper, "I will go and get an axe. I know where I can get an axe. I know where I can get one this time. Rabbit will not get away from me again!" The thought of all the things that Rabbit had made him suffer, made him very angry, and he hurried away to the place where he could get an axe.

Now, as soon as Wolf had got out of sight, Rabbit, from the inside of the tree, said to Heron, "Well, do you think that you are going to kill me now?"

"Yes," said Heron," "you will not escape me. I know how to keep watch!"

"Well, you had better keep close watch on me. I am very tricky. Why, I may be somewhere else at this moment. You know you are not sure that I am talking to you from this tree now. You had better look in here and see if I am really here." By this, Heron thought he might not be in the tree, so he bent his head down and stuck it up into the hollow of the tree, trying to get sight of Rabbit. Now, Rabbit had some tobacco and was chewing it. Just then he spit some of the juice into Heron's eyes. Heron pulled his head out, screaming and shouting with pain. He defecated all over the ground near the tree. He was blinded for a long time by the smarting and burning of the tobacco juice. But meanwhile Rabbit came down from where he was and ran away as fast as he could. Heron was still screaming and defecating all around.

Pretty soon Wolf returned with the axe. Heron had partly recovered from his trouble, so that when Wolf came up he was sitting near the opening as though nothing had happened.

"Well, now we shall have him," said Wolf, as he made ready to cut at the tree with the axe. "Yes, yes," answered Heron.

"But whose excrement is this all around here?" asked Wolf.

"Oh," said Heron, "Rabbit tried to get out while you were gone, and when he came down I punished him so severely that he defecated all about. I had a very hard time in subduing him, but he is safe in the tree now!"

Now, Wolf went over to one of the places where the excrement lay, and looked at it. "Is this Rabbit's?" he asked.

"No, that's mine," answered Heron indifferently.

Then going to another, he asked, "Is this Rabbit's?"

"No, that's mine," said Heron. And so on until he had gone all around, each time Heron answering that it was not Rabbit's but his own. Then Wolf went over to the tree and cautiously looked up into the hollow. He soon saw that there was no Rabbit there. Then he became very angry at being fooled again. He raised his axe and made for Heron to kill him. But Heron saw him coming and with a great cry of "*qânk*" flew out of reach just in time to escape. And that is

why Herons, when they become frightened, always fly away with a great cry that sounds like "*qânk.*" So now Rabbit had escaped from his enemies again.

Rabbit Outwits Panther

Rabbit and Panther were friends. They were traveling together. After a while they came to a place where there was a creek with a bad name. It was "*Dofogága hạ́tchi.*" Now, Rabbit wanted to go on and said that, as the creek had a bad name, it would not be good to camp there for the night. He said, "This creek has a bad name."

"Why is that?" asked Panther.

"Because everybody who camps here at night gets burned up." That is what Rabbit told him.

"Well, I think it will be all right," remarked Panther, "We will camp here anyway."

But Rabbit did not want to, so he said. But at last they made ready their camp for the night, as Panther would go no farther.

So when it got late they prepared to sleep. They had talked all the evening about the place and other things. Now Rabbit asked Panther, "What kind of a noise do you make when you are asleep?" He meant how did he snore.

"Why, I say '*nutslagùm! nutslagùm! nutslagùm!*'" said Panther. Then he asked Rabbit what kind of a noise he made when he slept.

"I say, '*nuts! nuts! nuts!*'" replied Rabbit.

Now, they went to bed and in a short time Rabbit pretended that he was asleep. He began to snore, saying "*nuts! nuts! nuts!*" And Panther thought that he was surely asleep, so he went to sleep himself, snoring "*nutslagùm!*" Now, when Panther was sound asleep Rabbit got up and got a piece of bark and shoveled a lot of coals from the fire on it. Then he threw the coals on Panther, and fell down quickly, lying as though he had been asleep all the time. Panther jumped up, howling with pain, and woke Rabbit. He told him that he was right, that he had been nearly burned to death. Rabbit would only say,

"I told you so. I told you so." Pretty soon they settled down to sleep again. As soon as Rabbit heard Panther snoring he thought that he was asleep and got up and played the same trick on him again. But this time Panther was only pretending to be asleep, and he caught Rabbit in the act and jumped up to kill him. Rabbit barely escaped his claws and ran as fast as he could. Then Panther gave chase. Several times he nearly caught him, but Rabbit managed to keep ahead. But soon he began to lose strength. Then to save himself, he made an ocean spring up between himself and the angry Panther. Panther could not get across that. And that is why there is an ocean.

Rabbit and Turtle Race

Turtle had heard that Rabbit was the swiftest runner. So one day he went to Rabbit, and said, "I understand that you are the fastest runner. I want to run a race with you."

Rabbit said, "What! You run a race with me? Why, look at your legs. You can't run at all!"

But Turtle said that he could, and he would not be satisfied until Rabbit agreed to have a race with him. The Turtle set the day for the race, and set the fourth day from that time. He said, "When you see me with a white feather on my head, you will know that it is I and not some other turtle." Then the Turtle went and got three more of his friends and put a white feather on the head of each. Now, the course over which they were to race was chosen by Rabbit. It was where there were four hollows and four hills. They were going to start on top of the first hill and race for the top of the last. Now, when the fourth day came around, Turtle placed one of his friends in each of the hollows. When all was ready Rabbit whooped to start, and they started. When Rabbit got to the top of the first hill he saw a turtle with a white feather going up the other hill ahead of him. And when he got to the top of that one he saw a turtle with a white feather going up the next. And so on till the last ridge. When he reached the goal, there was Turtle ahead of him.

"Well!" said Rabbit, "You are a great runner! Who would think that you could run with such short legs!"

Rabbit Fooled by Opossum

Rabbit and Opossum were friends. One day Opossum was sitting under a persimmon tree eating persimmons. Rabbit came along and saw him. He thought that he would like some persimmons. He asked Opossum how he got the persimmons. Then Opossum said, "Look yonder on that ridge. Now run from that ridge and butt the tree with your head and they will fall down." So Rabbit, who had already eaten some of Opossum's persimmons, said that he would get some too, so as to pay up. So he started out for the ridge, and when he got there turned and ran and butted the persimmon tree. But he only squealed "*Twīī!*" and fell over dead. "Why," said Opossum, "you were a fool. I climb up for them."

Rabbit Outwits Tie-snake

One day Rabbit and Tie-snake met. Rabbit had heard that Tie-snake was the strongest beast there was, so he made up his mind that he could fool him. He went to where Tie-snake had his den and told him that he had heard that he was the strongest puller in the world, but that he wanted to challenge him to a contest. "Why, nothing in the world will compare with me in pulling," said Tie-snake. But Rabbit was determined to hold a contest with him. Well, after a while Tie-snake agreed. Rabbit then gave him four days to prepare, and appointed the day.

Then Rabbit went to where another Tie-snake had his den, and told him that he had heard it said that he was the strongest puller in the world, and challenged him to a contest. "Why, you are to small, You can't pull much," said this Tie-snake. But Rabbit urged and urged, and at last this Tie-snake agreed to have a contest with him. So he appointed four days later for the trial, and left him.

Now, Rabbit went to the river where the contest was to be held and fixed a big grapevine across it with an end resting on

each bank. This was the way they had of doing the pulling, one on each side of the river trying to pull the other into the water.

On the fourth morning Rabbit took his place in the brush along the river bank, and soon saw the Tie-snakes come to the place agreed upon, and they took hold of the ends of the grape-vine and were ready to commence. Rabbit gave a whoop, which was the signal to begin, and the Tie-snakes began pulling. Each one thought that Rabbit was on the other end, but he was pitting them against each other. Now, they kept on pulling nearly all day, and at night they gave it up and went home. The next day Rabbit went to see the first Tie-snake, and the snake said, "Well, I am surprised! Who would ever think that such a little animal could pull like that! I never pulled so hard in my life! Well, you certainly are stout!" Then he went to see the other Tie-snake, and he told Rabbit that he was very strong, but that nobody would ever suspect it by looking at him.

Now, by winning this contest with the Tie-snakes, Rabbit won also the privilege of going to the river to get his water, instead of having to go to wells for it.

Punishing a Shaman

They had a village far away from the town. They killed a great many deer, where they stayed on a hill. They applied medicine given them by a shaman and were successful. They stayed four days, then returned. When they got to the town they found that their game had vanished. So they gave the shaman a deer in payment. When he ate it, it killed him. That is all.

The Panther and the Deer

There was a panther who went down to the creek to drink. He stopped at the edge of the water and saw a shadow reflected there. It was the shadow of a deer standing on the opposite bank. The panther poised himself and sprang into the water. He crawled out, and when the water settled he sprang in again.

He did this a number of times. At last he crept away because this time when the water settled the shadow was gone. The deer on the opposite bank had gone.

Half an hour later the panther was seen to enter his den with a doe thrown over his back.

The Stupid Woman

The people wore deerskin clothes. There was a hunter who went out hunting. He shot a deer and brought it home. He hung it up. The next day he wanted to go out again, and he said to his wife, "You must take the back-bone and throw it in the water." He meant that he wanted her to cook it in the water with the sofki. But she threw it in the creek. When the old man got back he asked her if she did it. She said, "Yes." He said, "When the back-bone is cooked in the water it is very nice these hot days. Fix me a plate and I will eat some of it." Then she told him that the back-bone was in the creek and she could not get it. He said to her, "I did not mean that way. I meant to cook it."

Now, in those days they used to have hickory sofki too. They pounded hickory-nuts and put them in the water with the sofki, and it was very good when cold. The next time the old man went hunting, he told her to put hickory in the sofki for him when he got back. So she put a hickory-nut in it. When he got home the old man asked for his hickory sofki. She poured it out for him, but he said that he did not taste the hickory in it. He asked her if she put it in. She said, "Yes." Then she stirred around in it with a spoon and at last brought up a hickory-nut, and said, "There it is." He was angry, and said, "I meant to have it pounded up and to have a whole lot put in."

The Foolish Hunters

A long time ago people were very stupid. There were two hunters who started out for turkeys. They had never seen a turkey or a deer, but they had been told about them. As they went along a grasshopper flew up between them when they

were about a hundred yards apart. Neither of the men knew what a turkey looked like. The grasshopper flew a little way, then alighted on one of the foolish hunters. It alighted on his breast. Now, the man whistled to his companion, and then called to him. He pointed to the grasshopper on his breast. Now, the other man saw the grasshopper on his friend's breast and thought it was a turkey. So he shot at it and killed it. He killed the man too.

The Foolish Cook

They say that the old people were gathered together. A house they made, of bark. When it was raised they settled there and fasted for four days. They had something to hunt the deer with, so they went hunting. They were boasting of deer killing to one another. Now, they had a woman for a cook, who stayed in camp. The fasting hunters went out, but they found nothing, and returned. When they reached camp they wanted food, but there was none. Then the woman cook took a breech-cloth and cooked it and set it in front of them. They ate it. Then they told stories and tried to outdo each other in bragging about killing deer. That's what they used to say about the olden time people.

The Hunters and the Alligator

In the old times there were four hunters who started out to hunt. They made their hunting camp in the woods and had been out some time. But one day one of them disappeared and they did not know what had become of him. The next morning another disappeared. This man had set out to find the first one. And on the next morning the third went to search for the first two, and he also disappeared. Now the fourth hunter took his dog and found their trail. The dog tracked them by a trail of blood to a hollow tree. The hunter found that an alligator had eaten them. Then he had a great deal of trouble. The alligator came out and attacked him. The dog helped the man. A long time they fought and soon the alligator got hold of the dog. And the man struck the alligator on the head and

then on the back and killed him. Now, he dragged the alligator home to his people. He told them all about how it had eaten his friends. They all set out for the tree where the alligator lived, and found that the first two were entirely eaten up, but the last one was not all gone. They took the bones of the third man and went home. Then they held a great feast and carried him to the grave. On the next night they had a war dance for farewell. That was the end of him. After the fourth day they called all the people together and all went to the place where he was buried, and camped. Then they held a farewell feast there. That is the story they tell.

The Talking Dogs

There was a young man who loved a young girl. Soon he married her, and in a short time started on a hunting trip. He took his dogs and set out. But his luck was no good. Sometimes he would strike a bear's trail and after a while would get a shot at the bear, but he could not hit him with his arrows. This kind of thing went on for some time. Then he gave it up and went into the woods and lay down to sleep. He lay beside his dogs.

Soon he heard a strange noise out on the prairie, and when he got up and looked he felt very uneasy about it. The oldest dog became restless too, and soon left the camp. He did not return. So the man decided to follow him. He followed for some time and soon emerged from the timber out on the prairie. It was bright moonlight. There in the light the hunter saw his dog talking with some other animal. It was a wolf. When the dog saw his master, he turned and said to him —

"We are having poor luck in hunting!"

The man was too surprised to answer, as the dog was speaking to him in his own language, and he never knew that dogs did that. The dog then said the same thing twice again. Then the hunter said —

"Yes, we are. But who were you talking to?"

"I was talking to a wolf," he said. "The reason for our bad luck in hunting is that the woman you married is unfaithful.

She has another man, and your guiding spirit has left you. You are disgraced, and that is why. You must kill that man."

After he had heard this speech from the dog, he thought about it. But he did not want to kill the man.

Then the dog spoke again and said, "We will do it for you. You wait here."

So the wolf got his kinsfolk, and together with the dog they started out for the town where the hunter had left his unfaithful wife. They reached this place at night and found the man in bed with the hunter's wife, and killed them. Then they returned to the hunter's camp and found him. By this time he had a great deal of meat all dressed. They all joined together and had a great feast. From that time the hunter had good luck. Now, he broke camp and went home to his town. He went to the house of his mother. When he saw her, she said, "You have had bad luck. Your wife is dead. But it is not so bad because she thought that you would never come back. So she went and got another husband. And one night the wolves came and killed them both."

But the man knew it before she told him.

The Hunter and the Talking Dogs

One man went out hunting in the old days. He had five dogs with him. He pitched his camp in a certain place. Now, all these five dogs knew how to talk; and more than that, they knew beforehand what was going to happen. Then they would tell their master. After their master had gone to sleep they would turn themselves into deer and go off amongst the deer. But the hunter could not seem to kill any deer.

These five dogs loved their master. Soon there was a great starving time because he could kill no deer. Their master was now nearly dead from hunger, so in order to save his life they made themselves into animals. Therefore they turned to deer. He was asleep. They went out as deer and returned with five deer in their company. When they arrived with the deer, he was asleep yet. They said, "Master, get up; it is daylight! We have been starving a great deal, but now we are to have a

happy time! Now, get your gun!" They had the five deer with them. Then they said, "Master, you must kill the smallest deer first. When you have killed the smallest, then kill the other ones. If you kill them all, you can lie down and we'll do the packing and carrying. You mark out the hides across the belly, and we'll do the skinning, too." The hunter stayed at the camp, the dogs brought them in and he did as they said. Then he took his knife and cut the hides and they did the stripping. They told him to cut the meat so that they could manage it and pack it up. "And when we have packed it up, we'll eat the smallest deer for a love feast. We'll eat all together." Then the smallest dog said, "Eat the smallest and first deer, and it will be great enjoyment. Roast the smallest deer first, it will roast more quickly. Put on a pot of soɪki, and we'll build a fire around it when it is ready. When all is cooked we will eat together."

They built a fire, and the meat and the sofki were cooked. The little dog spoke again, and said, "This is the first time that we have feasted together for love. When we eat together we shall know what is going to happen next."

The oldest dog said, "We have been starving, but now we have plenty. You have great influence and plenty to eat; now, who is to be the first in starting to eat? It is the young meat, and the youngest dog ought to start. But whatever you say must be done. I was young when you began to teach me to talk; now I am old. The younger ones you taught to talk. That's why we are all out to-day. Do you love all of us?"

"Yes," said the man, "I love you all, the five of you."

Then the largest dog spoke again. "I asked you who should start to eat the meat. The deer was young. So we leave you to decide, now."

The little dog then said, "Master, you begin. The master always eats first and feeds us afterward. So keep it up. You fix it and we'll eat it. We haven't eaten for ten days."

The old dog said, "Let's eat clean food, to make love between us all."

Then the master told them to go and get some leaves to

spread on the ground to eat on. They did it. The man was weak and could hardly walk. The meat lay close to him, so he spread it out before them. When all was ready, he said, "Now if we are ready, let us eat." The master took a bite.

The small dog said, "Take five bites of meat. Take only five drinks of sofki. If you take more than that, things will not go right with us. You must think about this, and not miss what I tell you."

This worried the man. Then he thought and remembered that when a man is very hungry and eats too much, he will die. That's why the little dog spoke to him so.

"Did you see what I told you might happen?" asked the little dog.

"Yes," said his master.

"If you eat too much, you will get so weak that we can not get you home." They all agreed.

On the first evening they ate only a little. The large dog said, "We'll eat a little bite all around. On the next morning we'll eat more and then we will defecate more. I couldn't defecate well because I was eating grasshoppers. But now I'm all right, I'll defecate meat. We'll keep busy eating, but when we get home they'll be nearly dead."

So in the evening they prepared to go home. There were five deer, and each was packed, and they started off. Their journey was one and a half days. The man found his wife and children nearly dead when he arrived home. Then the small dog said —

"Let's eat a love feast with your family as we did in camp. Cut off the meat well, and we will hand it to them. In the evening, cut off two chunks for each. This will be because we have escaped starvation. After giving it to us this way, tomorrow we will all eat together." Then they ate a love feast, and all got well.

"If it is going to be the last, let us all eat together again," said the big dog. "Take the deer bones and make soup in the trough. You have been eating with us, now go back to the old way, and eat as you used to, without us. We don't know

when we'll have another love feast. This is my last day. We have gotten home safely now, but in ten days I'm going to leave you. I'm going to die."

In ten days all the dogs died. "I never can get such dogs again," said the master. He and his family grieved, and decided to raise no more dogs.

On the seventh day, before the ten were passed, the master wanted to die too. But he lived to see all his dogs die. After they were all dead, he did not want any more dogs. They were prophets while they lived. "It troubles my mind to know what things are going to happen beforehand," said he. He lived till he died without owning any more dogs.

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THE NEZ PERCÉ INDIANS

BY

HERBERT JOSEPH SPINDEN

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THE NEZ PERCE INDIANS

By HERBERT JOSEPH SPINDEN

Author's Note. — In the summer of 1907 the Peabody Museum of Harvard University detailed the present writer, together with Mr R. R. Hellmann, a student of the Harvard Medical School, to study the archeology and ethnology of the Nez Percé region. The information gathered on that expedition, supplemented to some extent by further researches of the author in 1908 under the auspices of the American Museum of Natural History, has been embodied in the following paper.

The writer desires to express his thanks to Mr O. H. Lipps, Indian agent, and Dr J. N. Alley, physician, at Lapwai, Mr Henry Fair and Mr W. F. Smith of Spokane, Mr G. W. Bailey of Asotin, Mr A. E. Stiffel of Lewiston, Mr John Owre of the Government dredging steamer *Wallowa*, and many others for courtesies in the field, and to Dr R. B. Dixon and Mr C. C. Willoughby for advice and help in the preparation of this paper. — H. J. S.

Habitat and History

Name. — The large and important tribe commonly known as the Nez Percés call themselves Numipu, but this name seems never to have acquired a hold in the usage of outsiders. They apply this term to the tribe as a whole, having other names for the geographical divisions. The name, however, is in no sense a stock name and does not include the neighboring tribes which speak a related language. There is apparently no native term that embraces the whole stock. The word Shahaptin, which now supplies this need, is of Salish origin and was used by the earliest fur-traders as the name for both the Nez Percé nation and Snake river. It is the name given the Nez Percés by the Spokan Indians. The word takes different forms, such as Saptin, Sapetens, Shawpatins, Chohoptins, Shawhaptins, etc. The word Chopunnish, much used by Lewis and Clark, may have been obtained from the eastern Salish or corrupted from the Indian word Tsupnitpelun. The word Chopunnish seems not to have been used after Lewis and Clark except on their

authority. The name Nez Percé is a translation into French of a Siouan (?) designation said to be Tsupnitpelun.[1] This referred to an early custom of wearing a dentalium shell through the septum of the nose. Lewis and Clark sometimes call the tribe Pierced Noses, and mention explicitly the occasional wearing of the shell. Ross[2] says the people are called Pierced Noses from the custom "of having their noses bored to hold a certain white shell like the fluke of an anchor."

Linguistically the Nez Percés are connected with several important tribes living west of them. The best known of these related tribes are the Paloos, Wallawalla, Yakima, Klikitat, and Tenaino. The relationship is clear, and is seen in social intercourse and similarity in culture as well as in language. Linguistic relationship has been suspected between the Lutuamian stock and the Shahaptian.

AREA OCCUPIED. — The range of the Nez Percés extended from the Bitterroot mountains on the east to the Blue mountains on the west, between latitude 45° and 47°. Thus, while mostly in Idaho, they extended a considerable distance into Oregon and Washington.

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[1] The following list, taken from the synonymy in the *Handbook of American Indians*, gives the names of other Indian tribes for the Nez Percés:

Caddo,	Tchaχsúkuush.	Osage,	Peχasanμse ("plaited hair over the forehead").
Crow,	Apūpé ("to paddle"; "paddles").	Paiute,	Saíduka.
Dakota,	Póġehdoke.	Pawnee,	Tsuhárukats.
Gros Ventre,	Apaopa.	Quapaw,	I′nacpe.
Kalapuya,	Ani′pörspi; Asaháptin (?).	Shoshoni,	Thoigarikkah ("kouse-eaters"); Tsoigah; Tsooahgahrah.
Kansa,	Pegázande.	Siksika,	Komun′itup′io.
Kiowa,	Â′dalk'ato′igo ("people with hair cut across the forehead").	Tenaino,	Shi′wanĭsh ("strangers from up the river").
Kiowa Apache,	Mikadeshitchíshi.		
Okinagan,	Saáptin.		

Other tribes have given the Nez Percés' own name, as follows:

Caddo,	Tchútpelit.
Pawnee,	Tsútpĕli.

These terms evidently correspond with Tsupnitpelun, the Nez Percé version of the name given them by the Sioux. The word "Chopunnish" of Lewis and Clark may be a corruption of this term.

[2] Ross (*b*), I, p. 185. See the Bibliography at the close of the paper.

The exact boundaries are in many places difficult to determine, since the area actually inhabited was only a small part of the territory under Nez Percé control. The permanent settlements were situated only along the rivers. In the south the villages extended a considerable distance up Salmon river, at least as far as Slate creek and in all probability as far as the western line of Lemhi county. On Snake river the mouth of the Imnaha seems to have marked the southern limits. Above this point the Snake flows through a deep cañon between the Powder mountains and the Seven Devils. On the southwest the boundary line of the Nez Percé area circled the drainage basins of the Imnaha and Willowa rivers, and crossing Grande Ronde river above the mouth of the Willowa, ran north along the crest of the Blue mountains to a point on Snake river near the mouth of Tukanon creek. On the north it followed the divide at the heads of the short streams flowing into Snake and Clearwater rivers till it reached the Bitterroot mountains. Thence southward these high ridges formed an effective barrier boundary on the east.

There seems to have been a considerable strip of neutral ground between the Nez Percés and their traditional enemies, the Shoshoni on the south and the Spokan and Cœur d'Alênes on the north. On the other hand, the tribes friendly to the Nez Percés lived in close conjunction with them. The Umatilla tribe of the Waiilatpuan stock divided with them the Grande Ronde valley. The Paloos shared with them the rich camas meadows near the present town of Moscow.

There are no traditions of migration, and, so far as can be determined, the tribe has dwelt within these boundaries from time beyond memory. The meanings of most of the place names have been forgotten.

Names for a number of the bands, or geographical divisions, of the Nez Percés have been obtained, but the list is incomplete, especially as regards the bands on the lower course of Snake river. These names are derived mostly from the names of streams. Each group contained at least one important permanent village and a number of temporary fishing camps. These

permanent villages seem to have been the real basis of tribal division, since each had at least one chief. The great chiefs were war chiefs and apparently had no real control outside of their own communities.

Following is a list of the most important divisions :[1]

Èsnime — Slate Creek band, the upper Salmon River Indians.

Lamtáma — Whitebird band on Salmon river. Whitebird creek is called Lamata.

Tamanmu — Band at mouth of Salmon river, the name for Salmon river being Tamana.

Imnáma — Imnaha River band.

Walwáma — Wallowa Valley band.

Wewī'me — Band at mouth of Grande Ronde, or Wĭllīwewix.

Isäwisnemepu — Band near Zindels, on the Grande Ronde.

Inantoïnu — Band at the mouth of Joseph creek.

Toiknimapu — Band above Joseph creek on the north side of the Grande Ronde.

Hīnsepu — Band at Hansens Ferry on the Grande Ronde.

Sakánma — Band between the mouth of Salmon river and the mouth of Grande Ronde. The name comes from that of a cañon at Cruger Bar.

Saxsano — Band about four miles above Asotin City, Washington, on the east side of Snake river.

Hasotino — Band at Hasutin, opposite Asotin City, Washington. The name means literally "the great eel fishery."

Heswéiwewipu — Band at the mouth of Asotin creek, which is called Hesī'we.

Sálwēpu — Band on the Middle fork of Clearwater river, about five miles above Kooskia, Idaho.

Tukpäme — Band on the lower portion of the South fork of Clearwater river, which is called Tukupe, *tukupt* meaning "burnt."

Saiksaikinpu — Band on the upper portion of the South fork of Clearwater river. *Saiksaik* is the word for "fireweed."

Kamiaxpu — Band at Kamiah, at the mouth of Lawyer's creek. This band is also called *Uyame*.

Tewepu — Band at mouth of Oro Fino creek.

Atskaaiwawixpu — Band at the mouth of the North fork of Clearwater river.

[1] In the spelling of native terms in this paper, vowels have their continental sounds ; *x* is equivalent to German *ch*.

Pipū'inīmu — Band on Big Cañon creek, which is called Pipūĭnīme.
Painīma — Band near Peck, on Clearwater river.
Tukē'liklīkespu — Band at Big Eddy.
Taksèhepu — Band at Agatha on Clearwater river.
Makapu — Band on Cottonwood or *Maka* creek.
Yatóïnu — Pine Creek band.
Yaktō'inu — Band at mouth of Potlatch creek, which is called Yaka.
Tunèhepu — Band at Juliaetta on Potlatch creek.
Iwatōïnu — Band at Kendrick on Potlatch creek.
Lapwēme — Band on Lapwai and Sweetwater creeks.
Hatwēme — Band on Hatweh creek.
Simīnekempu — Band at Lewiston, Idaho.
Tsokolaikinma — Band between Lewiston and Alpowa creek. The name comes from the high-cut banks of the river, *tsoko* meaning "high-cut bank."
Alpowē'ma — Band on Alpaha (Alpowa) creek.
Witkispu — Band about three miles below Alpowa creek on the east side of Snake river. The name comes from *witx*, "alders."

Other bands, extending about eighty miles down Snake river from Lewiston, were: *Nuksiwepu, Sahatpu, Wawawipu, Almotipu, Pinewewewixpu, Tokalatoinu*, etc.

The names of villages would make a still longer list. The estimate of Lewis and Clark that the Nez Percés numbered more than 6000 could not have been far wrong.

ENVIRONMENT. — The area occupied by the Nez Percés is one of great topographical relief. It consists of a plateau, built up of successive lava flows, and rising from 3000 to 6000 feet above the sea, through which Snake river and its tributaries have cut deep narrow valleys with characteristically terraced sides. The eastern rim of the plateau culminates in the sharp jagged ridges of the Bitterroot mountains, an effective barrier with few passes. In the southern part of the area long stretches of the Snake and Salmon rivers exhibit the most pronounced type of cañon dissection. The Blue mountains, in the west, have domed summits that run out toward Snake river into broad sandy benches. The most favorable parts of the area are the Willowa and Clearwater valleys. The villages were situated usually upon the alluvial fans, or "bars," at the mouths of lateral streams, or

upon the occasional islands in the rivers themselves. Permanent villages were never established on the uplands. In a few cases the lateral streams have partly aggraded valley floors, thus furnishing a limited amount of level ground for village sites and large festival gatherings; Lapwai and Asotin creeks are cases in point.

Part of the region is forested and part is prairie. The forests on the western slope of the Bitterroot mountains extend down the northern side of Clearwater river till within forty miles of its confluence with the Snake. The valley of Potlatch creek, the principal tributary of the lower Clearwater, was heavily forested for most of its length, but lumbering operations have almost denuded it. Craig mountain and the Blue mountains are also forested. The timber consists mainly of pine, cedar, fir, and tamarack. The nonforested portion contains broad upland meadows which formerly furnished large supplies of camas, kouse, and other edible roots, but which are now given over to wheat farms. The ravines and valleys abound in shrubs such as syringa, haw, hackberry, serviceberry, etc. Willow and cottonwood grow near the larger streams.

The climate of the valleys is hot in summer, but mild and almost free from snow in winter. On the uplands the winters are much more severe, and in the mountains the snowfall is often heavy. The precipitation is largely limited to the winter months, with the result that the steep valley sides dry up and in the spring acquire a browned and almost desert aspect.

On the whole the region is one that offered little inducement to the development of primitive agriculture. There were natural gardens of edible roots, game was fairly abundant, and at certain seasons of the year fish were plentiful.

HISTORY. — The first white men to visit the Nez Percés were Lewis and Clark. They spent some time with these Indians, whom they praise very highly for honesty and hospitality. The explorers found them already in possession of horses which had been acquired from tribes to the south, and a few articles of European manufacture that had been obtained in trade. White men were known by report from both the Indians of the plains

and of the lower Columbia. Fur-traders early established posts at Wallawalla and on Cœur d'Alêne lake. In 1837 a missionary named Spaulding founded a mission at the mouth of Lapwai creek. Here he set up the first printing press in the Northwest and printed the Gospel of Matthew in the Nez Percé language. Soon afterward Catholic missions were established. In 1860 came the discovery of gold-bearing gravels on Snake and Salmon rivers, and thousands of miners poured into the region. From this date the history of the Nez Percés, especially in regard to treaties, which, when broken by the Government, resulted in the famous Nez Percé war of 1877, forms too important a chapter to be adequately discussed here.

Little has been written respecting the customs and arts of these Indians. The journals of Lewis and Clark, and of the early fur-traders, notably Alexander Ross and Alexander Henry, furnish nearly all the reliable material. This purely literary material has been carefully worked over by Dr A. B. Lewis. The account presented in the present paper is made up largely of information drawn from the Indians themselves, but is supplemented by the old accounts when these give additional evidence. In the study of the archeology of this region the present writer depends on personal investigations made during the railroad activities of 1897 to 1900 and again in the summer of 1907, also to some extent on accounts drawn from private individuals. Several private collections were examined through the courtesy of the collectors, notably those of Mr John Owre, of the Government dredging steamer *Wallowa*, Mr G. W. Bailey of Asotin City, and Mr W. F. Smith of Spokane.

Archeology

The archeological remains of the Nez Percé region may be considered under three heads: (1) village and house sites; (2) burials; (3) occasional finds on river bars, etc.

Shell-heaps and hearths. — No shell-heaps, except of very small size, are in evidence. Occasionally heaps of a cubic foot or more in size are found in the loamy banks of the rivers. A few of these were noted near the junction of the South and

Middle forks of Clearwater river and also near the confluence of the North fork with the same stream. They seem to be the remains of a single meal that had been buried or cast into a hole.

Two types of old fireplaces are also often found in the wash banks. One type, near the surface, shows the remains of sweat-house fires. The sweat-houses were built usually along the banks of the streams; some of them were slightly sunken and covered with sod. Stones were heated over a fire near the sweat-house and carried into it. So these shallow platforms of burnt stones and charcoal may be remains either of the sweat-house itself or of the fireplace near by. The second type of fireplace remains is buried from two to four feet below the surface. It is commonly from six to ten feet in diameter and slightly sunken in the center. Such fireplace remains mark the old ovens in which camas and other roots were steamed. The process of steaming will be described when we consider the preparation of food.

Bits of charcoal and a sprinkling of animal bones, mostly broken, are often found several feet below the surface. These however can offer no trustworthy evidence of extreme age because of the impermanent and unstratified character of the soil in which they are found. This soil overlies river beaches of rounded bowlders. It is light, and easily crumbles under the action of water. A large mass of such soil could be shifted or built up in a short time with the river in flood. Even deeply sunken hearths could be easily explained as the remains of the underground menstrual lodges of the women.

VILLAGE SITES. — Almost all traces of ancient village sites along Clearwater and Snake rivers have been destroyed by the tilling of the soil. Many are said to be still visible in the lower part of the Grand Ronde cañon. As remarked before, they were situated on the banks of streams or on islands in the streams. A favorite location was near a riffle where salmon could be caught. Some villages were occupied continuously, although the number of inhabitants might fluctuate. In the uplands the Nez Percés never built permanent villages, though

in a few places, where camas and kouse were abundant, they constructed temporary summer camps. It was at such a camp on Weippe prairie that Lewis and Clark first encountered members of this tribe. Some fishing camps were also impermanent.

Two village sites, the only ones that could be located by actual remains, were examined. The first of these, situated near the mouth of Tammany creek, on the east bank of Snake river a few miles above Lewiston, has been partly washed away by placer mining. This site may be identified with Hasutin. The name means "the great eel fishery." It was used as a camp until thirty years ago, especially during the season of lamprey eel fishing. Here there are still several house-rings in two or more groups. The rims of these circles are elevated a foot or more above the general level of the ground, and the central portions are from three to five feet below the rims. Their size is remarkable, since they measure from sixty to seventy-five feet in diameter. The caving away of the bank has in one place made a perfect cross-section of a house-ring. On brief examination a few bits of charcoal, some Unio shells, and flint chips were found. In several house-rings pits have been dug by relic-hunters. A digging-stick with a bone handle, and a cache of shell and glass beads are reported to have been plowed up in a house-ring in an adjacent field. Many fragments of flint and obsidian are strewn along the river beach, and three pestles, either broken or unfinished, were picked up near by. The only one of interest is shown in plate VIII, 5.

Another and much better preserved village site is situated on the south bank of the Middle fork of Clearwater river, just outside the limits of the town of Kooskia. It is on a gravel flat, unsuitable for agriculture, that is now partly covered with a growth of young pine trees. As may be seen by the plan (fig. 2), the house-rings are of two distinct but intermingled types. The circular house-ring is found here, as at Hasutin, but it is noticeably smaller, being seldom more than twenty-five feet in diameter. The second type is long and narrow. The width is usually about eighteen feet, while the length covers from sixty to eighty-five feet. These house-rings are all

sunken from one to three feet, and have well-marked, elevated rims. As a rule the circular rings are deeper and more clearly marked than the elongate ones. The latter invariably have the axis parallel with the river bank, but no orderly arrangement with courts or streets is evident.

This village site has not been occupied for many years. The ground is well sodded, while trees, some of which are eighteen

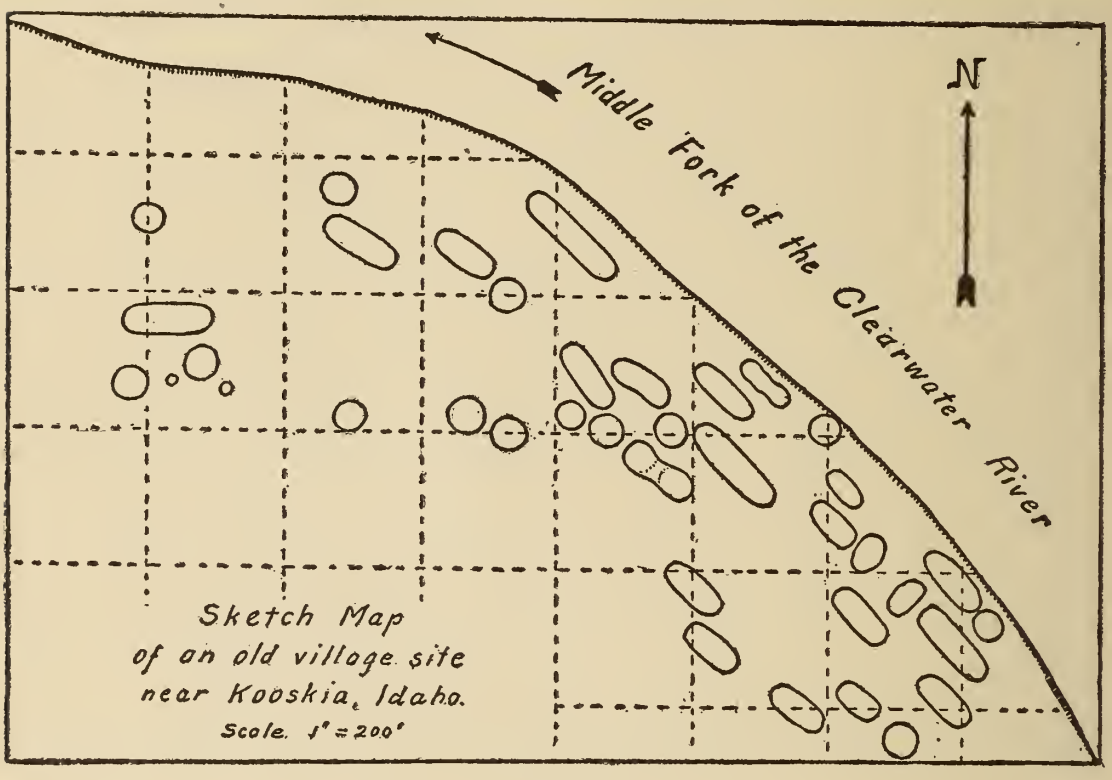


FIG. 2.

inches in diameter, grow around or directly out of the house-rings. In one ring a glass bead was found beneath the sod, showing that the site was probably occupied after the arrival of articles of European manufacture.

Permission for extended investigation could not be obtained. Brief examination and slight excavation revealed fireplaces about twelve feet apart along the central axes of the long house-rings. No implements were obtained here. Remains of sweat-houses and sweat-house fireplaces were seen along the river bank, but these were of much more recent origin than the house-rings.

Lewis and Clark[1] describe a circular house-ring at Kamiah

[1] Lewis and Clark, *Original Journals*, vol. v, p. 33.

that bore signs of age when they saw it. They mention both the sunken center and the raised rim. This seems to show that the circular house had a considerable antiquity and that circular house-rings cannot be ascribed to the recent introduction of the tipi lodge.

It is clear, even from this scanty material, that the archeological remains furnish evidence of both of the main house types —the circular lodge and the long communal lodge. These types will be discussed in a later section.

CEMETERIES. — Cemeteries are found near the traditional village sites, usually on the first bench above the river bottom, where the ground was easy to dig and where the graves could be seen from the village. The rock-slides under basalt cliffs were also sometimes used. Cemeteries are readily located by the heaps of river-worn or rock-slide bowlders piled over the graves. But so completely have most of the cemeteries been rifled by relic-hunters that it is now difficult to find any undisturbed graves except in the regions at present occupied by the Indians.

At Kamiah an old cemetery occupied, in 1897, a rocky flat near the mouth of Lawyer's creek. This was partly destroyed by the railroad grade. The ground had the appearance of being "hilled" like an old hop field. There were few, if any, osseous remains in the graves, although along the river banks, where high water had washed out some of the graves, human teeth were to be found, and flint implements occurred in caches. In one case twenty finely finished and several crude spear-heads were found together. They are all triangular and without barbs, but they are made from a considerable variety of material. The present Indians claim that this stony field shows the remains of winter cache pits and not of graves.

Another group of graves was situated on the east bank of Snake river, nearly opposite the mouth of the Grande Ronde. These graves showed large piles of stone in which pieces of cedar were placed upright. At the mouth of Potlatch creek a group of graves in a rock-slide was uncovered in making a railroad cut. In one of them a Lewis-and-Clark medal was found.

Mr John Owre excavated some graves near Almota, on Snake river, the majority of which had the skeleton of a horse over that of the man, while cedar stakes, often partly burned, were placed upright on the top. In some of the graves a large amount of property in the form of beads, knives, etc., was found. In a single grave were found five flint-lock guns, seven iron tomahawks, several long iron rods, and two long iron knives. In other graves a quart or more of shell beads (plate IX, 12–14) and several pounds of copper beads (plate IX, 16–18) were unearthed. In one grave a flint knife fourteen inches long was found. In this cemetery the bodies were buried both flexed and at length, about five feet below the surface.

A group of four graves on the second bench of Asotin creek, about a mile above Asotin City, was opened. In two of them a few children's bones were found, along with three or four crumbling dentalia beads (plate IX, 15), while in the third the badly decomposed skeleton of a young man was uncovered. The fourth was apparently empty. The skeleton of the young man rested in a flexed position upon the right side, facing the southwest. Nothing was found buried with it. A few pieces of charcoal and the brown remains of several small sticks that had been placed erect were also taken from the graves. The graves were shallow, measuring about three feet in depth by four feet in diameter. The bowlders that had been heaped over the grave were elevated about a foot above the surrounding surface and extended a like distance below it.

In general the burials are characterized by the invariable capping of bowlders, and by the presence of cedar stakes placed either upright around the body or horizontally over it. The position of the body itself varies widely. With the bodies are found ornaments and utensils, but no remains of food.

Most of the objects found in the graves and along the river bars are similar to those made or used until recently by the Nez Percés and so will be treated under Material Culture. A few are unusual. Plate IX, 1 and 2, show two narrow, polished celts of jadeite (?), one found at the mouth of Captain John creek and the other at the mouth of Kouse creek on Snake river above

Lewiston. These were evidently acquired in trade from the Indians of the Northwest coast. They have been cut by grooves, and the fractured portion between the grooves shows clearly in the illustration (side view). Neither this method nor this material was employed by the Nez Percés. These implements are said to have served as wedges, taking the place of the native elk-horn wedges.

Plate IX, 3, represents a flat stone found near Asotin, and now in the collection of Mr G. W. Bailey. It is probably a hunting record. In the same collection is a curious stone, shown in plate IX, 19. The body of this object is cylindrical, and at one end is a crudely sculptured head with wide open mouth. The object probably represents a rattlesnake, once the patron spirit of some shaman.

Material Culture

The culture of the Nez Percés will be taken up in the following pages, not in its present debased form, but as nearly as possible in its form at the time of the first contact of these Indians with the whites. The introduction of horses and of articles of Spanish manufacture occurred before this time and doubtless exerted considerable influence. Any attempt to go back too far, however, would involve the risk of misinterpretation. On the other hand the influence of the Plains has been very much on the ascendancy during the last seventy-five years, and it is well to lay as much stress as possible on features that are known to be old and that seem to be of autochthonous development. Unfortunately in the matter of art and design there is little old material, and much that is modern must be studied and analyzed in the hope of isolating the strictly native elements.

STONE

The Nez Percés worked skilfully in stone, shaping their implements by the two common methods, chipping and pecking. By the chipping method they made knives, arrow and spear heads, scrapers, and perforators. By the pecking process they fashioned pestles, mortars, mauls, and a few smaller objects.

MATERIALS. — The materials to be had were excellent and occurred in considerable variety. For chipped implements the material most prized was obsidian, which was obtained on John Day river, the name of this stream meaning "obsidian river," and in the mountains to the east, possibly in the vicinity of Yellowstone National Park. Parties were sent out to collect it, but no evidence that the implements were roughly shaped at the quarries could be obtained. Many kinds of flint, as well as jasper and basalt, were also used. The latter is the prevailing stone of the country. Pecked implements were made from river bowlders of granite, diorite, and other hard stones. Bowlders were generally chosen whose shape and size approximated that of the implement desired, so that labor could be minimized. Unfinished implements are found in considerable quantities. In rare cases these show rough preliminary chipping. The best implements present a refinement of shape and a smoothness of finish that are truly remarkable.

CHIPPED IMPLEMENTS. — Knives of several shapes are shown in plate VI, 1–6, and in plate VII, 1–6. The former group, from the fine collection of Mr W. F. Smith of Spokane, shows blades that vary from five and a half to eleven inches in length. The longest blades attain a length of fourteen or fifteen inches, but all exceeding four inches are rare. These blades were either simply wrapped at one end with deerskin or were set in short handles of wood. The end of the handle was notched and the blade set in with pitch, the gum of chokecherry, or sturgeon-blood glue. The hunting and scalping knife received a great deal of attention. It was carried in a deerskin bag or sheath which was suspended on the chest from a cord which passed around the neck. The flaking of knives and other flint implements was accomplished by pressing upon the stone with a bone point and then giving the latter a sudden sidewise twist. A flaker of bone with a notch in the end was also used. The stone to be chipped was held in the palm of the left hand. The flaking is usually very even, and the lines of the finished implement almost invariably symmetrical and pleasing. The secondary chipping of the best implements from this region is exceedingly minute and regular.

Spear and lance heads are barbed and non-barbed. The largest measure about four inches in length, but the majority do not exceed two inches. It is difficult to discriminate between spearheads, knives, and arrowheads; the working rule of classification depends mainly on the size. Any point more than an inch and a quarter in length may safely be called a spearpoint if it is barbed; if not barbed the chances are that points exceeding three inches long were intended for use as knives, and those under that size for spearheads. The shapes of the spearheads vary, the principal ones being shown in plate VII, 1, and 5–11. These heads were used on war spears, but rarely on fishing spears.

Arrowheads are figured in plate VII, 10–22. Judging from the variety of the bases the arrowheads must have been attached to the shafts in several distinct ways. The extreme minuteness of some of these arrowheads is worthy of note. The arrowhead with serrated edges is an unusual type (plate VII, 16), while arrowheads with two or more sets of barbs have been found. The straight-topped arrowhead (14) is very common in the Nez Percé area, while the arrowhead with a shaft (21) predominates in the Yakima region.

Perforators are shown in plate VII, 23–25. The usual form has a wide top to serve as a finger-hold. Scrapers are usually irregular in shape; many are flat on one side and somewhat domed on the other, with a straight scraping edge. Such a scraper was used in the tool for graining skins, shown in fig. 5^6. For another stage of skin-dressing a rough scraper was made by simply striking off a disk-shaped fragment from a river bowlder.

All the chipped implements described above were made by the men; pecked implements were made by the women.

PECKED IMPLEMENTS. — Pestles were made by laboriously pecking the surface of selected river bowlders with the sharp edge of another stone. The time and labor required to make good pestles rendered them valuable family property, and they were handed down for generations. A number of pestles, some crude and some finely finished, are shown in plate VIII. The process of manufacture is indicated pretty clearly by the specimens figured.

Fig. 1 of plate VIII shows a smooth, oblong river bowlder that has been neatly broken by an encircling series of well-directed blows. It evidently did not give satisfaction, for it was thrown aside without further change, and was not used, even temporarily, as a pestle. Fig. 2 shows a pestle entirely natural except for the abrasion of its lower surface, caused by pounding. In fig. 3 a water-worn stone has had its rougher angles smoothed off by pecking and its base flattened to give a better pounding surface. Fig. 4 shows an old broken pestle made over into a new one. Fig. 5 pictures a remarkable specimen. At first glance it might seem that here is an old celt form remodeled into a new implement, so true are its surfaces. As a matter of fact these are entirely water-worn, and this object offers an example of the rare preliminary chipping in the manufacture of pestles. Chipped roughly from a disk-shaped bowlder, it had already been somewhat smoothed by pecking before it was finally rejected.

Figs. 6 to 11 of the same plate illustrate the principal types of finished pestles. Perhaps the most common type is the long conical pestle with slightly flaring sides like the entasis of a column (figs. 6–8). These vary from six to eighteen inches in length, and from two inches to two and one-half inches in diameter. Fig. 7 represents a pestle of this sort which is slightly modified. A natural protuberance at the upper end is marked with a groove to give a phallic significance. Another pestle, recently presented by Mr Henry Fair to the American Museum of Natural History, shows a cord-like enlargement running lengthwise. No other decorative or symbolic modifications were observed.

The second main type of pestle has an enlarged pounding surface, with the upper two-thirds of the implement contracted to offer a more convenient hand-hold. Three varieties of this type are shown in figs. 9–11. In the first example (fig. 9) the handle is round and domed at the top, while the lower portion is somewhat angular and contracts toward the base. This kind of pestle has either three or four rounded corners to the base. Fig. 10 represents the "hat-shaped" top, while fig. 11 shows a simple rim enlargement at the top. These last two

varieties were used both as pestles and as mauls. The enlargement at the tops of the handles prevented them from slipping from the hand when used for driving wedges.

The distribution of the types of stone pestles west of the Rocky mountains presents an interesting field of study. Close analogies to the types described above, if not identical forms, are found over a considerable area. The hat-shaped top is found on the long slender pestles of California. Combined with a base more like that of the Nez Percé pestles, it is found on the lower stretches of Fraser river, British Columbia. The simple conoid type prevails throughout southern Washington. East of the Nez Percé country the use of stone pestles disappears until the region of the Great Lakes is reached. Although thus on the frontier of the area of stone pestles, yet the workmanship shown by the Nez Percés in making these implements is perhaps the best seen anywhere. Plate VI, 8–11 and 19, 21, 23, illustrate some of the beautiful pestles in Mr W. F. Smith's collection.

Stone mortars, hollowed out of thick, disk-shaped river bowlders, are rarely found. They are rather shallow and may have been used as paint mortars or for some other specialized use. If they served as ordinary mortars they must have been furnished with basketwork sides. Wooden mortars and basket mortars placed over flat stones were more commonly used. Two beautiful stone mortars are shown in plate VI, 20, 22.

Cylindrical stones with a polished groove on one side, such as is illustrated in plate VII, 33, were used as handles for digging-sticks, the stone being lashed across the top of the stick. This custom presents an interesting analogy to the use of stone disks on the digging-sticks of California Indians. Such stones as these have been called arrowshaft straighteners, but there is no evidence of such use among the Nez Percés. Arrowshafts were polished with a pair of rasps such as are shown in plate VII, 32. The two oblong pieces of light tufa, each with a semicircular groove, were placed together with the shaft within the groove. This implement was as effective as sandpaper. Possibly a still higher polish was given by the grooved object of soapstone shown in plate VII, 34.

It has already been pointed out in discussing pestles that those having a protuberance at the top of the handle, to prevent the hand from slipping, were also used as mauls. When speaking of Indians near the Grande Ronde river, Irving[1] says: "They generally made use of a stone mallet wrought in the shape of a bottle, and wedges of elk-horn, in splitting their wood." The usual type of grooved maul with an attached handle was not used by the Nez Percés, although many specimens are found at no greater distance than Umatilla river in northeastern Oregon. River bowlders of various sizes were, however, crudely grooved to serve as net-sinkers. Hammerstones for fracturing, etc., seem to have been merely such unmodified stones as were conveniently at hand. The heads of war-clubs (fig. 5^5) were also made of unworked river bowlders.

PIPES. — Pipes were made of soft stone, the two varieties most in use being a bluish or yellowish soapstone and a light spongy tufa. Catlinite seems occasionally to have been acquired from the Plains tribes. The earliest form of pipe was doubtless the straight tubular pipe that may once have prevailed over the western half of North America. Plate IX, 4 and 5, illustrate two pipes of this character, taken from old graves. The larger one, in the collection of Mr G. W. Bailey, has a small smoke-hole through the stem, and a disk-shaped mouth-piece. This disk is pierced by a hole near the rim, evidently to admit a cord by which the pipe might be suspended from the neck. The stem was formerly decorated with an incised design of which only few traces remain. The second pipe, belonging to Mr John Owre, is shorter, and the bore of the stem is greater. The bowl in both cases is conical. Possibly a wooden mouth-piece was used with the second pipe. Plate IX, 7, 8, show two examples of the right-angle pipe bowls. The material of the pipe shown in fig. 7 of the same plate is reddish tufa. The drawing of a tomahawk on the bottom of the pipe shows that it is fairly modern. On the sides of the bowl is a crisscross design, and on the front a crude drawing of an Indian head with feather

[1] Irving (*b*), p. 64.

head-dress. Fig. 8 shows a smaller, better made pipe of soapstone, decorated with lines and dots in a pleasing arrangement. Both of these pipes are in the collection of Mr Bailey. Fig. 6 presents a disk-shaped pipe bowl of yellow soapstone. The aperture is a right-angle one. The bowl has no decoration. This pipe, found near Asotin City, is now in the Peabody Museum at Cambridge. All of these pipes with right-angle bowls were provided with wooden stems. Many very minute pipes have been obtained in the Nez Percé region.

The smoking of the pipe formed an important part of the burial and other sacred ceremonies of the Nez Percés. The calumet, or peace-pipe, ceremony seems also to have been practised among them or to have been introduced at a very early date. Hines[1] describes a Nez Percé peace-pipe as having had a stem one inch in diameter and three feet long, and a bowl four inches long and two inches in diameter, made of a dark smooth-grained stone. When smoked it was passed in regular order as among the Plains tribes.

BONE AND HORN

Many small implements were made of bone and horn. Elk-horn wedges, which completely supplanted celts in this region, were of prime importance. An elk-horn wedge is illustrated in fig. 5[7]. Such wedges were used not only for splitting wood, but also for felling trees, hollowing out canoes, etc. They were held in position, and then pounded with the stone mallets already described. The horn bow is referred to later. Awls of various sizes and for various uses were made of bone (plate VII, 27–29). The last one shows an awl used in braiding rope. In weaving basketry a small awl was employed. Bone was also extensively used as material for arrow-flakers, for heads of fish-spears, gouges, and many other small implements. Whistles were made of the long-bones of the sand-hill crane, and beads of the bones of other birds. Dice and gaming pieces were commonly made of bone. Before being fashioned into the various objects, bones were usually boiled to remove the animal fats. Most of the objects here mentioned are described in later sections.

[1] Hines, p. 184.

METAL

Copper was probably not known before the arrival of the whites, or at least until articles of civilization had reached this region. The Nez Percé language has no separate term for copper; it is simply called *moksmoks*, "yellow." Such large quantities of copper have been taken from graves, some of which appear to date from early times, that it seems reasonable that copper was acquired in trade from the Plains or the Northwest coast. An examination of the tubular beads, such as are figured in plate IX, 16–18, shows uneven, undulating edges, such as would be more apt to result from a pounded nugget than from a cut sheet.

Lewis and Clark found the Indians of this region, who had never seen whites, in possession of a number of Mexican silver dollars. Iron at an early date supplanted flint and obsidian for the manufacture of arrowheads and knives.

WEAVING

The art of weaving was practised to a considerable extent by the Nez Percés, in contrast to its very slight development in the Plains area. In this, as in the making of stone pestles, the Nez Percés occupy the frontier of a typically Pacific Coast art. The most conspicuous product was the flat wallet, or carrying bag, which indeed is still made and used by the Indians. Flexible cylindrical pack-baskets, water-tight cooking baskets, cups and food bowls, winnowing baskets, basket-work tops for mortars, fez-shaped women's hats, as well as mats for floor and house coverings were also made.

It seems fairly certain that these people never wove blankets. On inquiry, they denied all knowledge of such, and insisted that blankets of elk and buffalo hides were the only kinds used before the coming of the whites. The beautiful blankets brought back by Wilkes, several examples of which are in the National Museum, are more likely to belong to the Puget Sound area, where the weaving of blankets from the hair of the dog and the mountain goat, sometimes mixed with the down of wild geese, was a common practice. The designs on these blankets are

entirely geometrical and undoubtedly show certain general similarities with those found on the twined wallets of the Nez Percés. But the elements are so simple, consisting of triangles, squares, zigzags, etc., and the combinations so varied, that such similarities may, after all, have little significance. The blankets, moreover, show more colors than are found in early Nez Percé textiles. The colors in these blankets appear to be vegetal, while, except for a root which produced a brown dye, and rock slime which produced green, the Nez Percés depended upon minerals for paints. The Nez Percés are not known to have made even the simple blankets woven of strips of rabbit-skin; nor are they known to have used the hair of the dog or the mountain goat in any kind of textiles. They did not make woven tumplines, but used a strip of deerskin for this purpose.

The bast of Indian hemp (*Apocynum cannabinum* L.), called *kamo*, originally formed the foundation for all the lighter and more flexible baskets. The hemp was first made into cordage. Of late years this native material has been adulterated with cotton cordage. Grass, especially beargrass (*Xerophyllum tenax* Nutt.), was much used as a secondary material to carry the design. Beargrass was gathered in the mountains; it was plentiful along the Lolo trail. Corn-husk has largely replaced the native material in modern times, and worsted yarns in gay colors have also been substituted for the grass overlay.

Wallets. — The flat wallet (plate VI, 17) shows a technique of simple twined weaving with the ornament applied by the process of false embroidery. When this process is used the designs do not appear on the inside, but only the loose ends of the colored elements. In these wallets the embroidery element takes only one twist around each loop of the foundation, and that toward the right. Fig. 3 shows a somewhat diagrammatic representation of this method of weave and ornamentation. Both the vertical and horizontal members of the textile proper are cords of hemp. The false embroidery element may be beargrass, corn-husk, or yarn. The margin shows a simple turning down of the woof, which is then bound down by the warp. Often the margin of the wallet was protected by a lining

of deerskin. The wallets were made in many sizes. Many were two or even three feet in length and fifteen or twenty inches in width, but smaller ones were more common. The wallets were carried by double handles made by passing a single thong twice through each side of the top. The handle thus

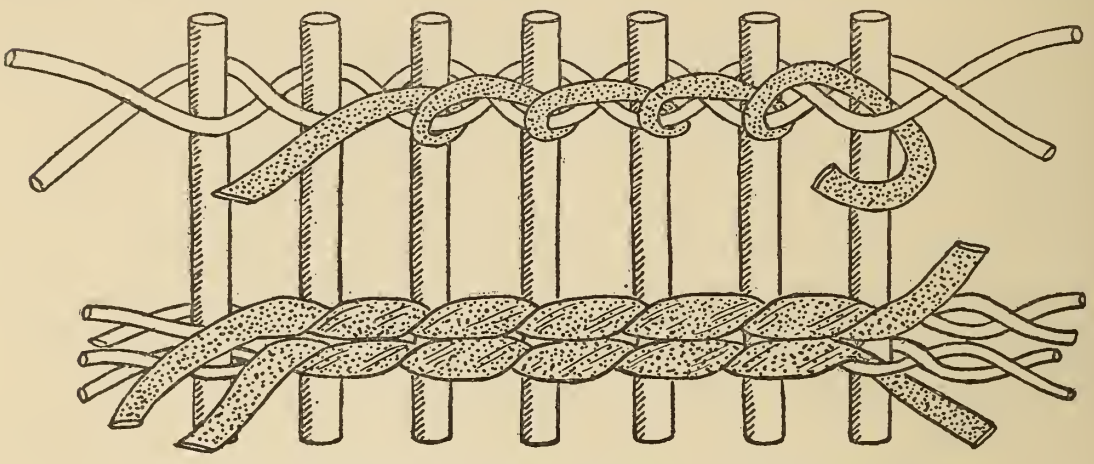
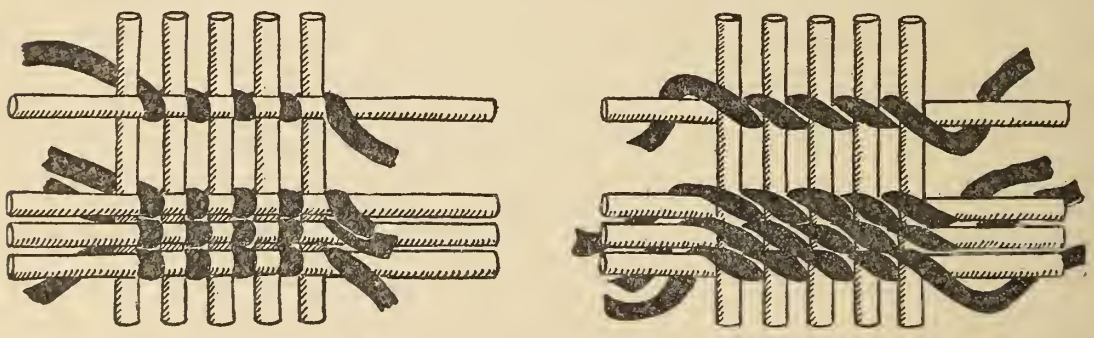


FIG. 3. — Technique of "false embroidery" of the flat wallets.

closed the bag. The wallets were gaily decorated. The designs will be considered later. A pattern was applied to each side of the bag; as a rule these two patterns were entirely different.

CARRYING BASKETS.—The cylindrical carrying baskets (plate VI, 13) and the basket hats (15 and 16) show a different kind



a *b*

FIG. 4. — Technique of "lattice weave" of the cylindrical baskets and basket hats.

of weave, although at first glance it seems the same as that of the wallets. The materials are the same, but the cord of the carrying baskets is generally coarser than that used in the wallets and the women's hats. The technique of the weaving is shown in fig. 4, *a* representing the aspect of the inside of the

basket, while *b* exhibits that of the outside. It is seen from these diagrams that the foundation is simply a lattice-work of vertical and horizontal cords. The colored element which appears on the outside passes over and under the horizontal element of the foundation, and across the vertical one. The color shows as a solid mass on the outside of the basket, while on the inside it appears in vertical lines alternating with the hemp. This sort of weave seems to have been effected from the inside of the basket, because the twist on the outside runs toward the left and not toward the right as in the case of false embroidery.

The cylindrical baskets were sometimes a foot and a half in diameter and two feet deep. The bottom was flat. The rim was usually covered with a strip of deerskin. A handle or a tumpline of deerskin or elk-hide was fastened to one side of the basket near the top. Plate VI, 13, illustrates a good example of this type of basket.

BASKET HATS. — The basket hats of the women exhibit the same method of weaving, but with finer elements and more careful workmanship. Plate VI, 15, 16, show two examples of the women's hats. The material on the outside is beargrass, which was used either in its natural cream color or stained dark brown or yellow. Many modern basket hats show the use of yarns rather than grass. The top of the basket hat was made with a sort of radial weave similar to the bottom of the carrying baskets. The hats were all fez-shaped, with a double thong at the crown to which pendants were sometimes hung. In these hats the textile art of the Nez Percés reached its highest development. Almost identical hats were used by the Yakima, the Umatilla, and other neighboring tribes on the west. The designs were almost entirely arranged in zigzags, with three points at the top and three at the bottom.

COILED BASKETS. — Water-tight bowl-shaped baskets to serve as cooking vessels, food bowls, and cups were made of strips of willow after the coil method with imbricated decoration. The process of construction is identical with that of the Yakima and Klikitat baskets, after which it may have been patterned. Some close-coil baskets without imbrication were also made. Although

imbricated baskets have not been made for many years, some of the older natives remember women who could make them. The material used to carry the design in the imbrication was xerophyllum, commonly dyed black or orange. The four-cornered baskets so typical of the Salish and the northern portion of the Basin area, were not made by the Nez Percés. The coil seems to have been one of rods and splints. The sewing thread was quite uniformly split. A sharp awl was the only implement used in weaving. Coil baskets were regularly used as cooking vessels by the Indians of this section. The skin and paunch pails of the Plains area seem never to have been used.

Plate VI, 18, illustrates a mortar with basket-work sides. The bottom was a common flat stone. This funnel-shaped basket, with the opening at the bottom about six inches in diameter, was pegged down tightly upon the stone. The weave is a coiled one, rather crude and with no attempt at ornamentation; the number of rods in the coil varies; the margin is finished off with a braid. Old mortar baskets are said to have been decorated with diamond patterns applied not by imbrication but by simply using a colored sewing thread as in the southern Basin area. This sort of mortar strongly recalls the mortar of California. It was not, however, fastened to the stone with pitch as in the latter area.

Winnowing baskets were used in cleaning kouse and other roots. The material for such baskets was the shredded roots of birch (*Betula microphylla* Bunge) trees, that grow along water courses. The method was a loose double-rod coil, open enough to allow the dirt to be sifted out. In shape the baskets resembled a gold pan, having a flat bottom and flaring sides. They were not decorated and were rather crude in workmanship. Plate VI, 12, illustrates a Nez Percé winnowing basket in the Peabody Museum. The margin was finished off by dropping alternate stitches of the last coil and simply turning the sewing thread around the rod itself.

MATS. — Mats were used for house and floor coverings, and as sheets upon which berries could be spread and dried. They were made by two methods, according to whether the material

was cattail (*Typha latifolia* L.) or tule (*Scirpus lacustris* L.). Mats made of cattail were simpler in construction and less effective in keeping out rain than those made of tule. They were similar in color, size, and the complete absence of decoration. The width averaged about four feet and the length nine feet.

In the cattail mat the elements of the woof were bound together by the simple turning of two cords, over and under the doubled blades, at intervals of from three to six inches. These warp-cords were not severed, but were passed continuously back and forth, making loops now at one end of the mat, now at the other. The ends of the mat were left unprotected and the raw edges were simply trimmed down evenly or turned under the warp. The tule mat was sewn rather than woven. The sewing threads were about three inches apart. The woof element consisted of two stems of tule which were twisted lengthwise, and pierced by the sewing thread at every half turn when one stem was directly over the other. The sewing threads were continuous and formed loops at the ends of the mat, as did the warp-cords in the cattail mats, but they were reinforced along the ends of the mat with a two-strand rope, with which they were intertwined. This rope served to strengthen the end of the mat. The side edges, also, were strengthened with a twined cord.

HOUSES

The Nez Percés constructed at least four distinct types of houses: first, a long communal house; second, a circular tipi lodge; third, an underground menstrual lodge for the women; fourth, a sudatory for the unmarried men. A fifth type, hardly deserving mention, was a rude brush shelter thrown up when on hunting expeditions. There seems to have been some variety of construction in the first two types. The floors of the houses were all more or less depressed by excavation, the summer ones slightly and the winter ones to a depth of two or three feet. The earth removed was heaped about the sides, thus raising the wall of the house.

THE LONG HOUSE. — The long communal dwelling was the

most important, as a single structure housed many families. According to Indian informants this house was shaped like an A-tent. It had two ridge-poles which the upright supports separated by a few inches. The poles were tied with rope. The aperture between these ridge poles extended the whole length of the house and served as a smoke flue. Against these ridge poles side poles were laid, and to the latter long mats were tied, shingle-fashion. The mats were of two kinds; their technique has already been described. Poles were often laid up against the mats as a safeguard against wind. The earth thrown out of the excavation for the interior was piled up on the outside to bank the bottom of the mats. Dry grass was first laid against the mats to prevent decay.

Instead of mats a very coarse heavy grass, commonly called rye-grass (*Elymus* sp.), was sometimes laid over the side poles or rafters to the depth of several inches and then covered with earth.

The fires were arranged in a row down the middle of the house, about ten or twelve feet apart. There were two families for each fire. As a rule the house was open, but occasionally small partitions were put up which divided the house into a double row of stalls. There was always an open space down the center. There were two or more small entrances in one side of the house; in the winter these were closed with heavy skins which hung from the tops of the openings. Also in the winter time there was often an inner skin lining for the house, but this was probably true only of the smaller houses. The beds were laid nearest the walls upon built-up mattresses of dry grass and the inner bark of cottonwood trees.

Lewis and Clark make frequent mention of these long houses and for some of them give measurements. One of the longest was situated near Lawyer's creek, and is thus described:[1]

"The village . . . consists of one house only which is 150 feet in length, built in the usual form of sticks, mats and dry grass. It contains 24 fires and about double that number of families."

Cox[2] thus describes the houses of the Nez Percés:

[1] Lewis and Clark, vol. v, p. 16.

[2] Ross Cox, p. 84.

"Their habitations are covered with large mats fixed on poles; some are square, others oblong, and some conical; they are of various sizes, from 20 to 70 feet long and 10 to 15 feet broad. There are no interior divisions, and an opening at the top serves the double purpose of a window and a chimney. These dwellings are pretty free from vermin and are easily changed when occasion requires."

The old village site at Kooskia (see fig. 2), already described, shows oblong house-rings that agree with these descriptions. The longest house-ring there is about eighty feet, and the average about fifty feet in length. The average width is about eighteen feet.

Long houses with flat roofs are mentioned by Lewis and Clark,[1] but no account of any such could be obtained from the Indians. It is possible that scaffolds for drying fish were mistaken for the frames of houses.

There were no strictly ceremonial structures.

TIPI LODGES. — The circular conical tipi, covered with either mats or skins, was also a native type. Lewis and Clark speak of a chief, residing near Kamiah, who had "a large conical lodge of leather." Certainly at a later date lodges of buffalo skin were very common. It is probable, however, that until horses were procured buffalo robes were too valuable as blankets to be used for house coverings. Plate x, 6, presents a tipi lodge covered with mats, the upper ones of cattail and the lower ones of tule. According to Townsend[2] the tipi lodge covered with buffalo skins was the usual form when traveling.

The tipi lodge was ordinarily formed of ten or twelve poles. Of these, three were first tied near the upper end and spread to form a tripod; then the other poles were laid against the three. This lodge was usually sunken about two feet, especially in winter. Lewis and Clark[3] mention an ancient circular house-ring near Kamiah, which was about 30 feet in diameter, with the rim exceeding three feet in height and the center sunken four feet in the ground. Circular rings are also to be seen at the old village sites already described.

[1] Op. cit., vol. v, p. 100, and Gass, p. 212.

[2] Townsend, Thwaites ed., p. 225.

[3] Vol. v, p. 33.

MENSTRUAL LODGE. — The menstrual lodge was circular, about twenty feet in diameter and five or six feet deep. Poles were laid across the excavation on a level with the ground, and upon these grass and then earth were spread. A circular opening was left near one side, from which a ladder, made of a forked stick with rope steps, descended to the floor. The floor was covered with mats; there was a fire near the middle, and beds around the sides. This house was used by the women during the menstrual period, and before and after childbirth. Its use seems to have been limited to the winter months, for during the summer, and when on the trail, an old tipi set up at a distance from the main camp served the purpose. The men were not allowed to come near these lodges; the occupants had to cook their own food and were not allowed to touch anything that others used. There was one or more of these lodges to each village, and sometimes ten or more women occupied the lodge at one time. Lewis and Clark mention several times these lodges and the restriction of the women. They remark on the presence of this place of seclusion, even in the smallest communities, in the following words:

"Even at this small habitation there was the usual appendage of the solitary lodge, the retreat of the tawny damsels when nature causes them to be driven into coventry." [1]

SUDATORY LODGE. — During winter the boys above fourteen years of age and the unmarried men usually slept in a low subterranean sudatory lodge. A circular excavation, about three feet deep and ten or twelve feet in diameter, was covered with poles which were laid across on a level with the ground. These poles were covered with rye grass and then earth to the depth of several inches. The sudatory was entered by a sloping passage. The interior was thickly bedded with grass. A pile of stones was in the center. A fireplace outside served to heat stones in the morning, and these were brought into the lodge and water poured over them; thus all who wished could take a sweat-bath before getting up. These sudatory sleeping quarters were always on the bank of a stream, where the men could

[1] Vol. v, p. 11.

take a plunge bath after the sweat. Often as many as fifteen men and boys were crowded into these close quarters. Only a robe was necessary for covering.

Small sweat-houses were constructed on the banks of streams for the use of both men and women. Temporary ones were quickly constructed of a framework of willows forming a dome, covered with the blanket of the bather. More permanent ones were made on the same sort of framework, but covered with grass and sod. Plate X, 3, shows a willow framework for a temporary sweat-house.

FURNITURE AND UTENSILS

The furniture for the houses was very simple. There were no stools or benches, and the bed was used during the day for lounging. The beds were not built above the ground or covered, but consisted merely of a heap of dry grass or a sort of mattress made from the inner bark of cottonwood trees. Blankets were of elk-hides dressed without removing the hair. Pillows were folded deer or bear skins. In the long houses the beds were arranged against the walls with the feet toward the center. In the round tipi lodges the beds were arranged as sectors of the circular area, the fireplace being in the center. The floors were covered with mats. Storage baskets were piled at the heads of the beds. The more valuable articles of clothing were hung up.

A number of the common household utensils have already been described, especially the basketry and the pestles. All boiling was done in coiled willow baskets. Besides these cooking baskets there were no important cooking utensils, for all food not boiled was either steamed in pits or roasted in the ashes.

Baskets mortars were much used for pounding roots, but wooden mortars also were used. These latter were of several sorts. Sometimes a portion of log was hacked and burned into a hollow vessel without much regard to form. The form with a handle at each end (plate VI, 14) may have been recently acquired from the Plains tribes, but there is no doubt that wooden mortars of the more indeterminate shapes were made in the old times.

Food was eaten out of wooden bowls and bowl-shaped baskets. Spoons and ladles of buffalo and mountain-sheep horn were in common use. Some had short and some long handles. All showed careful workmanship and good finish, but almost nothing that could be called ornamentation.

The digging-stick was one of the most necessary and characteristic implements of the Nez Percés. It was about two and a half feet long, with a fire-hardened point bent slightly forward. The handle consisted of a piece of bone, horn, or stone, from five to eight inches in length. This handle was usually perforated in the middle and lashed firmly at right angles to the stick. The stick was operated with both hands, one being placed on each end of the handle. When the weight was applied to the handle, the point penetrated the ground to a depth of about six inches, and then the curved end was directed foreward, thus breaking the sod. A stone handle is shown in plate VII, 33.

Pack-baskets and winnowing baskets have already been described. The latter were used in cleaning roots.

FIRE-MAKING. — Fire was made by means of the hand-turned fire-drill. The bow-drill was unknown. The hearth-stick was either of the root of the light-leaved willow (*Salix lasiandra* Benth.) or of the stem of "smoke-wood" (*Clematis ligusticifolia* Nutt.). A slight hollow was made in this hearth-stick and a groove was cut from one edge into the hollow. The whirling stick was made of the dead tips of red fir (*Pseudotsuga mucronata* Sudw.). Finely broken brush or dry grass was used for tinder. As in many other areas the upright piece was called "man" and the horizontal one "woman." This method of fire-making is said to have been introduced by Coyote, the culture-hero. Although fire could be made in a short time by this method, as a rule fires were not allowed to go out in the permanent camps.

FOOD AND ITS PREPARATION

In common with other tribes of the arid Basin area, the Nez Percés depended for food largely upon vegetal products. They were not, however, as restricted in this respect as the tribes to the south, since salmon was plentiful during certain

periods of the year and game was fairly abundant. Agriculture was entirely unknown.

CAMAS. — The most important of all vegetal foods was camas (*Camassia esculenta* Lindl.). This liliaceous bulb was gathered in enormous quantities in the wet upland meadows of Weippe prairie, Camas prairie, in the open country near the present town of Moscow, and in the Grande Ronde valley. It grows in the glades of piny woods, and in partly inundated prairie land. The bulbs lie very closely together, so that when the camas is in bloom, the flats from a short distance resemble lakes of fine, clear water.

Camas was dug to a slight extent early in the spring before the growth of the stem had exhausted the stored-up energy of the bulb. The great harvest came during June and July, after the plant had nearly finished blooming. At this time the soil dried rapidly and the bulbs matured. Another great harvest occurred in the fall. It will be remembered that Lewis and Clark first encountered the Nez Percés, September 20, 1805, on Weippe prairie, when the Indian women were laying in a winter food supply of this root. Camas, as well as the other food roots, was gathered entirely by the women, the men at this time being busied with fishing, hunting, and war-parties. A digging-stick with a fire-hardened point and a bone crosspiece at the top was the only implement used. Cylindrical pack-baskets were used in carrying the roots to camp, and goldpan-shaped sifting trays in cleaning them.

Agreeable to the taste, sweet and nutritious, camas was eaten either raw or cooked. When cooked, the usual preliminary process was as follows: A pit from six to ten feet in diameter and about three feet deep was lined with split dry wood to the depth of almost a foot. Upon this wood was placed a layer of smooth stones averaging about five inches in diameter. The wood was set on fire and the stones allowed to become red hot. When the fire had burned down the stones were leveled and some earth and a layer of coarse grass were spread over them. Then twenty or thirty bushels of camas bulbs, which had been previously cleaned and the black outer layers of the bulbs re-

moved with the fingers, were thrown into the pits and arranged in a conical heap. The white bulbs were then covered with a layer of grass, some two or three inches thick. After this, water was poured on till the steam began to rise, and then the entire heap was covered with several inches of dry earth. Sometimes a fire was kindled around the base of the heap. The bulbs were allowed to steam for from twelve hours to three days. If cooked for the shorter period the grass was removed and the roots permitted to steam themselves dry, like boiled potatoes, and were then commonly placed on scaffolds and further dried in the sun. After having been cooked, the roots were no longer white, but brown or black, and had a much sweeter taste than when in the natural state. They were fit for use immediately after being taken from the pit, but soon spoiled if not subjected to further treatment. This further treatment usually consisted in pounding up the soft roots into a sort of dough and forming them into loaves which were rolled in grass and again subjected to steaming. Fresh bulbs were placed in the pit along with these loaves to permit the free passage of the steam. When taken out a second time, the loaves were made over into smaller cakes and dried in the sun or over the camp fire. These cakes were irregular in shape and from one-half to three-quarters of an inch in thickness. When kept out of the moisture they remained fresh for a long time. They resembled plug-tobacco in color and pliancy. When the initial steaming extended over a period of two or three days, the roots when uncovered were found to be converted into a dark-brown glue-like mass. From this gruel was made for immediate consumption and sun-dried loaves for future use.

Camas was also sometimes simply boiled in water and in this condition resembled mealy potatoes. It was occasionally reduced by boiling to a sort of syrup or molasses.[1]

KOUSE. — Kouse was another vegetal food, scarcely less important than camas. Under this name were grouped a number of closely related plants of the *Lomatium* family, the

[1] The processes of cooking camas have been often described. See Lewis and Clark, III, pp. 78–79; V, pp. 124–127; Townsend, pp. 247–248; E. Palmer, pp. 408–409.

commonest being *Lomatium kaus* Wats. These plants, unlike the camas, flourish in dry rocky soil and were commonly gathered by the Indian women along the brows of steep hills. The harvest season was very early, most of the digging occurring during April and May. The roots, corm-like or tuberous in character, were eaten either raw or cooked. The usual preparation was to dry the roots, scrape off the brown outer skin, and then reduce them to powder in mortars. This meal was made into gruel for immediate use or into bricks for future consumption. The method of making the bricks was as follows: The meal was moistened with water and formed into flat, oblong, square-cornered cakes that were suspended on a swinging framework of flat sticks and partly baked over a slow fire. The bricks were pierced with one or more holes in order that they could be strung on a thong, like Chinese money, and hung from the saddle. They bore the imprint of the sticks upon which they had rested, and were sometimes embellished with scratched parallel or crossed lines. In size these bricks vary. Lewis and Clark[1] give the dimensions as an inch and a quarter thick, six inches wide, and eighteen inches long. Palmer[2] says the cakes were one foot wide, three feet long, and only from a quarter to half an inch thick. Several cakes in the Peabody Museum at Cambridge are three or four inches wide, about a foot long, and an inch thick. When fresh the flavor of kouse root is said to resemble that of parsnips, but after being dried it tastes more like stale biscuit, and in fact was often called "biscuit root" by the early explorers. Both the meal and the cakes remained edible a long time. The cakes were either eaten without further preparation or were broken up in water and made into a mucilaginous sort of soup. This root was especially valued as being the first vegetal food to be gathered in the spring.

OTHER ROOTS. — Bitterroot (*Lewisia rediviva* Pursh) was a favorite food root when it could be procured. It was gathered in the Bitterroot mountains and on the mountains near Imnaha.

[1] Vol. v, p. 12.

[2] E. Palmer, p. 407.

It was prepared by merely drying, when it resembled dentalia shells in shape and size. According to Palmer,[1] this root contains so much concentrated nutriment that a single ounce in the dried state is sufficient for a meal.

Another favorite root was that of the *Carum Gairdneri* Gray. This tuberous root, usually about the size of a man's finger, has, when cooked, a very agreeable taste, with a cream-like flavor. Piper calls it the finest food plant of the Northwest Indians.

Wild carrot (*Daucus pusillus* Michx.) was boiled, steamed, or eaten raw. Wild onions (*Alium Geyeri* and others) were steamed in a pit, like camas and kouse. Some species from this area have a very mild flavor. *Scorzonella nutans* Geyer is reported to have been eaten raw. It is a small root, almost transparent, and filled with a bitter milky juice. Wapato (*Sagittaria latifolia* Willd.), the great source of vegetal food for the Indians of the lower Columbia, was secured only in trade. Many less commonly known roots were also occasionally used as food; in particular, tobacco root (*Valeriana edulis* Nutt.), *Œnanthe sarmentosa* Prestl., *Balsamorrhiza Hookeri* Nutt., *B. sagittata* Nutt., *Claytonia megarrhiza* Parry, *C. lanceolata* Pursh, etc.

BERRIES. — Various berries and seeds were extensively used for food by the Nez Percés. Of the former, serviceberries (*Amelanchier* sp.) were the most important. During favorable years they were collected in large quantities and made into small disk-shaped cakes which were sun-dried upon mats and kept for winter use. When the harvest of serviceberries was light, their place was taken by the inferior hard-seeded berries of the hawthorn (*Cratægus* sp.). Blackberries (*Rubus macropetalus* Dougl.) were also dried. Chokecherries (*Prunus dimissa* Nutt.) and huckleberries (*Vaccinium membranaceum* Dougl.) were commonly boiled. Most other berries, including strawberries (*Fragaria* sp.), salmonberries (*Rubus spectabilis* Pursh), currants (*Ribes aureum* Pursh), gooseberries (*R. oxyacanthoides saxosum* (Hook.) Coville) were eaten fresh. Roseberries (*Rosa* sp.) served as a valuable food in times of famine, since they remained

[1] E. Palmer, p. 407.

upon the bushes throughout the winter. Serviceberries, chokecherries, hawthorn, currants, and gooseberries flourished along the water courses and near the villages. Huckleberries were commonly gathered in the highlands, especially on Craig mountain. Often the branches were broken off and the berries raked into a basket with a coarse comb.

Sunflower (*Helianthus* sp.) seeds were much used for food, being valuable on account of their oil. They were eaten either raw or pounded into meal and fried in small round cakes. The grinding of sunflower seeds is mentioned in one of the Nez Percé myths.[1] The seeds of *Chenopodium* sp. and probably some grass seeds were also eaten.

Famine foods. — During severe winters the Indians of this region often suffered from famine, during which they were glad to eat lichens and the inner bark of trees. Lewis and Clark[2] give instances of the use of a lichen (*Alectoria* sp.) that grows on pine trees and which was boiled and eaten, and mention that long-leaved pine trees (*Pinus ponderosa* Dougl.) were cut down in order that the natives could gather the nuts and strip off the bark. The nuts were boiled or roasted.

Fish. — It has already been stated that a considerable part of the food supply of the Nez Percés was derived from fishing and the chase. The most important food fishes of these Indians were as follow:

1. Red fish, or blue-backed salmon (*Oncorhynchus nerka* Walb.). This fish, varying from three to eight pounds in weight, was the favorite fish for drying. It was first caught about the first of July on Clearwater river, but was taken much earlier at Wallowa lake and at the headwaters of Salmon river. Only the last of the run spawned on the lower stretches of the rivers.

2. Quinnat, Chinook, or tyee salmon (*O. tschawytscha* Walb.). This salmon, averaging more than twenty pounds in weight, was caught somewhat later than the blue-backed salmon.

3. Steel-head salmon, "salmon trout" (*Salmo Gairdneri*

[1] Spinden, p. 21.

[2] Vol. v, p. 4.

Richardson). This salmon was caught during fall and winter; it weighs usually about six pounds.

4. Cut-throat trout (*S. mykiss Gibbsii* Suckley).

5. Waha lake trout (*S. mykiss Bouvieri* Bendire). These trout occur only in Waha lake on Craig mountain.

6. Lamprey eel (*Entosphenus tridentatus* Gairdner, or *Lampreta cibaria* Girard). Eels ran about the same time as redfish or blue-backed salmon, but were caught on the lower stretches of the rivers.

7. Suckers (*Pantosteus Jordani* Evermann; *Catostomus macrocheilus* Girard, etc.).

8. Sturgeon (*Acipenser transmontanus* Richardson).

Salmon formed by far the largest item. Fresh salmon were broiled, baked, or boiled. For broiling they were never cut crosswise but always lengthwise in three slabs, one slab from each side and a middle one containing the spine. They were baked in the ashes and boiled in water-tight baskets. No superstition seems to have been attached to the disposal of the bones. Salmon were also dried on scaffolds and smoked for winter use. The Nez Percés never made the dried salmon meal which formed so important an article of trade at the Dalles. Eels were eaten fresh or were dried. Smaller fish, such as trout, suckers, etc., were of lesser importance in the food supply. The Unio also played a minor part in furnishing food. It has already been mentioned that small quantities of Unio shells have been found on the old village sites. These shell-fish are rather rare on the Clearwater, but fairly common on the Snake. They were also obtained from the Cœur d'Alêne region. They were steamed in a small pit and after this operation were often dried in the sun and kept for some time.

GAME. — Of game, elk (*Cervus Canadensis* Erxleben), deer *Odontocoelus Americanus macrourus* Raf. and *O. hemionus* Raf.), and mountain sheep (*Ovis cervina* Desmarest) were fairly common, while buffalo (*Bison Americanus* Griff.) were hunted on the great plains by parties that crossed the mountains for that purpose. Practically all parts of the animals were eaten, the fat on the entrails being considered a delicacy. In the case of smal

fawns Lewis and Clark mention that they were boiled entire.[1] Meat was either boiled in baskets or roasted; it was never partaken without some preparation. Lewis and Clark thus describe[2] a bear barbecue of the Indians:

"We gave the Indians, who were about fifteen in number, half the female bear, with the shoulder, head and neck of the other. This was a great treat to those poor wretches who scarcely taste meat once a month. They immediately prepared a brisk fire of dry wood on which they threw a parsel of smooth stones from the river, when the fire had burnt down and heated the stones they placed them level and laid on a parsel of pine boughs. On these they laid the flesh of the bear in flitches, placing boughs between each course of meat, and then covering it thickly with pine boughs; after this they poured on a small quantity of water and covered the whole over with earth to the depth of four inches. In this situation they suffered it to remain about three hours when they took it out. I tasted of this meat and found it much more tender than that which we had roasted or boiled, but the strong flavor of the pine destroyed it for my pallate."

This seems to have been the favorite method of cooking bear meat. The description given by Lewis and Clark corresponds exactly with that given by the old Indians of today.

Deer, elk, and buffalo meat were dried into "jerky" for winter use. Pemmican was made only of buffalo meat; marrow from the long-bones was the source of the oil used. Berries were not used in the pemmican. The amount of buffalo meat brought back from the plains must have been small, even after the introduction of horses. It seems that the large band of men, women, and children went for the express purpose of getting their fill of meat while there rather than with the intention of bringing back a supply. Most of the back-pack consisted of robes, horns, etc., which formed valuable articles of trade.

Otter and beaver were considered great delicacies; but dogs were never eaten, and horse meat was consumed only under stress of famine. The men under Lewis and Clark aroused great derision and contempt by eating the flesh of dogs and horses.

[1] Vol. v, p. 4.
[2] Ibid., p. 34.

FISHING AND HUNTING

Fish were speared, hooked, netted, or trapped. Fishing apparatus was fairly well developed and shows similarities with the technology of the Pacific coast.

FISH SPEARS. — There were two kinds of fish spears. One kind was the three-pointed gig and the other was a spear with detachable point. The gig had a long shaft of red fir which was jointed to the trident head by a wrapped joint that permitted the spear being taken down when carried. The side arms of the trident were of flexible wood, usually hackberry (*Celtis Douglasii* Planch), but had bone points driven in holes bored at the lower ends. These points projected inward and upward. The center arm was of wood tipped with bone and somewhat shorter than the side arms. The spread of the trident was about five inches and the length of the spear about eight feet. This spear was used at night in fishing from a canoe by the light of pitch torches. It was not thrown from the hand. The spear with detachable point was intended to be thrown ; for this reason the spearhead was attached to the shaft, and the shaft held by a long braided cord. The shaft of the spear was about five feet long. It was not a plain shaft, like that of the gig-spear, but had its largest diameter near the middle, measuring about two inches, and from this point tapered toward both ends. The spearhead consisted of three pieces of bone and a socket of elderberry wood in which the end of the shaft was fitted. The three bone pieces were cut from the thickest portion of the leg-bone of an elk after this had been boiled. The center piece ended in the point. Against the straight flat edges of this center piece were fitted the side pieces which formed the barbs. The three pieces of bone and the short cylinder of elderberry wood were securely bound together with wrappings. A cord with one end buried in these wrappings was tied to the shaft about a foot from the head, with enough slack to allow the spearhead to be readily loosened from the shaft. Figure 5[10, 11] illustrate the features of these two kinds of fish spears.

With this spear large numbers of salmon were caught from platforms built out over the water or from jutting ledges of

rock. The platforms were usually just above brush dams that almost closed the channel at the head of a riffle and which left only a small passage for the fish. Sometimes the fish were speared on riffles without the aid of the platform, and the brush dam. Suckers were speared from the bank as they nosed about the roots of willow and cottonwood trees that overhung the stream.

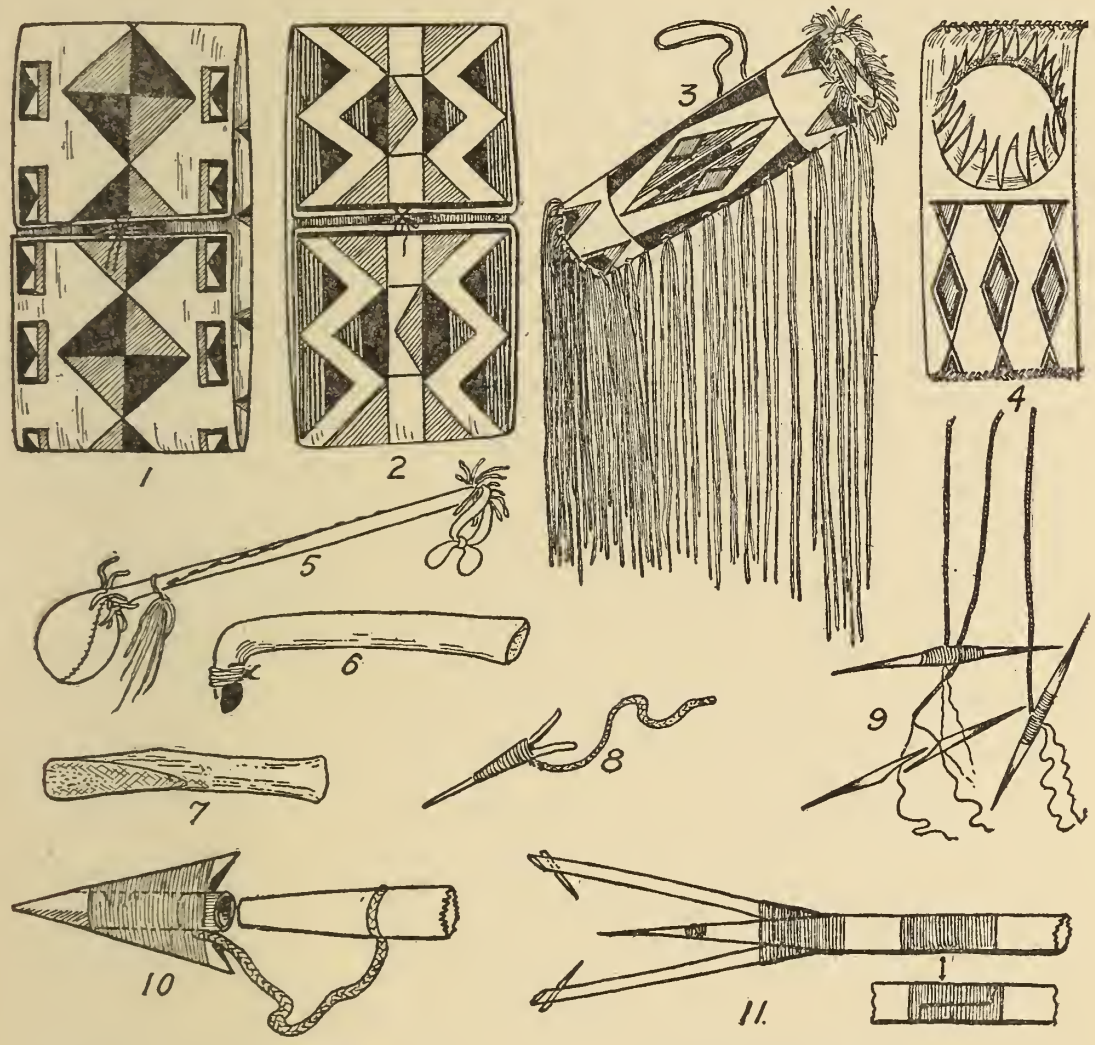


FIG. 5. — 1–2, Parflèche bags. 3, "Medicine" bag. 4, Elk-hide hat. 5, War-club. 6, Grainer. 7, Elk-horn wedge. 8–11, Fishing tackle.

HOOKS. — The gaff-hook was entirely unknown before the coming of the whites, but was then promptly adopted. Even curved fish-hooks were unknown, the gorge-hook taking their place. Small gorge-hooks used in catching trout are shown in fig. 5[9]. The gorge-hooks were made of two hardened

thorns of the red or black haw, placed base to base and bound together. The line was of Indian hemp, and was fastened to the middle of the gorge-hook, while two smaller threads hung below to wrap round the bait. No floaters or sinkers were used. Large gorge-hooks, six or eight inches in length and made of two bone points bound in the same manner as the thorns, were used to catch the sturgeon of Snake river. A piece of lamprey eel was used as bait. Ross[1] mentions a still simpler method employed when fishing with a line: a bit of deerskin was tied as bait to the end of a horse-hair line. Small fish snapped at the skin and were jerked out of the water before they could let go.

NETS. — Nets of several kinds, made from cord of Indian hemp, were manufactured by the Nez Percés and used in fishing for salmon and eel. The cord was wrapped on bobbins made from two bent sticks placed back to back and bound round the middle. The process of net-making was about the same for the different kinds of nets. The mesh was commenced along the string of a small bow placed over the feet of the net-maker. The size of the mesh was determined by a smooth flat stick over which the cord was turned and knotted.

Dip-nets were stretched upon a frame made of two branches of red fir tied together at the base and joined at the tips by a flexible piece of willow. A cross-piece, to hold the spread and serve as a handle in dipping, was securely tied to the two side-pieces near the base. A forked branch was never used as a frame. The length of the dip-net frame was about seven feet and its greatest width about two and a half feet. The net extended well back toward the handle. These dip-nets were used in catching both eel and salmon. The eel nets had a deeper pocket at the lower end than did the salmon nets. Lewis and Clark[2] give descriptions and small drawings of a somewhat different type of dip-net. According to these drawings the sack was deep and almost round at the opening, while the side-pieces did not meet at the handle but were held apart

[1] Ross (*a*), Thwaites ed., p. 142.

[2] Vol. v, pp. 22, 47.

by two cross-pieces, the handle being fastened to the middle of the latter. Dip-nets were manipulated from the platforms which have already been mentioned in connection with spearing. A long-handled dip-net with a small sack was sometimes used to catch salmon in the deep holes of small streams.

Seines were often used. They were about fifty feet long by fifteen feet deep. One or more small logs served as floaters and roughly grooved river bowlders were employed as sinkers.

Traps. — Fish weirs and traps were constructed of willow brush and stones. The weirs were used in connection with platforms to compel the fish to keep to a narrow passage. Fish traps were used in the smaller streams. A sort of screen trap is described by Clark substantially as follows:[1] A dam was formed with stones across a small stream so as to collect the water in a channel not exceeding three feet in width. The water was forced with great speed out across a mat or screen of willows closely tied with bark. This mat was about four feet wide by six feet long, and lay in a horizontal position with its extremities fastened. The water passed through, but fish running down stream were thrown out on the screen and lay there till removed. Several trout from three to seven inches in length were on the trap when Clark saw it. According to natives, the mat basket or screen of this trap was more or less boat-shaped. The withes were all gathered together at the lower end of the trap.

Another form of trap consisted of two vertical walls of willow built across the stream. In the lower wall was a trap-door of slanting sticks that could be opened only by fish ascending the stream.

Game was hunted with bow and arrow and with spears. Decoys, game drives, and traps were also used.

Bows. — The making of the bow reached a remarkable stage of development among the Nez Percés and the tribes along the middle course of Columbia river. There were three kinds of bows, one simple and two sinew-backed. The finest bows were made from a single piece of mountain-sheep horn. A large

[1] Lewis and Clark, vol. v, p. 8.

horn was split and a slip taken out. This strip of horn retained its spiral coil and had to be steamed, stretched, and straightened by a long tedious process. After the horn had been shaped, a backing of deer sinew was added. The glue used in attaching the sinew was obtained by scraping the skin of the winter steelhead salmon (*Salmo Gairdneri*) or from the blood of the rarely-caught sturgeon (*Acipenser transmontanus*). For this purpose the blood lying next to the backbone was thoroughly boiled, spread out on a rock and dried, and then cut up into blocks or strips, in which condition it kept for years. It was ready for use at any time after being moistened with saliva. The bowstring was made of fine twisted deer sinew. There were no wrappings on the bow. These bows were highly valued.

So far as the writer knows there are no examples of this type of bow extant. It seems to be quite distinct from the compound bow of horn which was common in the southern Basin area. The nearest approach to this bow is seen in an old specimen in the Peabody Museum at Cambridge, which shows a single-piece foundation, evidently of elk antler. This bow is accredited to the Mandan.

The above description is corroborated and amplified by the observant Alexander Henry,[1] who also describes the other types of bows used by the Indians west of the mountains, including the Nez Percés. He says:

"The bows . . . are neatly made, and of three kinds—the horn, the red cedar, and the plain wooden bow. The horn bow is made of a slip of ram's horn. The outside is left undressed, but overlaid with several successive layers of sinew glued to the thickness of one third of an inch, and then covered with rattlesnake skin. The inside is smoothly polished, and displays the several ridges of the horn. These neat bows are about three feet long, and throw an arrow an amazing distance. The red cedar bow is made of a slip of that wood, overlaid with sinew and glue like the horn bow, and also well polished inside; it is nearly four feet long, and throws an arrow a great distance. The plain wooden bow is of cedar, willow, or ash; the outside is untouched, except that the back is removed. It is well smoothed, but not so much esteemed by the natives as either kind of

[1] Henry-Thompson, pp. 713–714.

sinew bows. These people make the handsomest bows I have ever seen — always preferred by other Indians. I have known a Piegan to give a gun or a horse for one of those made of sinew. Their preservation demands great care and attention, as in hot weather the sinew becomes too much braced, and in moist weather too much relaxed, being seldom so justly proportioned to the strength of the horn or wood as to prevent warping; but the simple bow requires no particular care, and is always ready for use."

ARROWS. — Arrow-shafts were made from branches of serviceberry (*Amelanchier* sp.), straightened by hand after being heated and polished with rasps of tufa (plate VII, 32). The arrowheads of many shapes have already been described and figured (plate VII). They were usually of obsidian or flint, and were bound to the shaft with fine sinew threads. The arrow was fitted with three eagle or hawk feathers, likewise tied down with fine sinew wrappings. The shaft was frequently decorated with painted bands at the base of the feathering. Henry[1] thus discribes the arrows:

"The arrows are much longer than those of our Indians E. of the mountains, being nearly three feet, very neatly made, slim-pointed, and well-feathered; they are usually tipped with flint, but of late years iron has been secured for that purpose."

In shooting, the bow and two or three extra arrows were held in the left hand. The arrow was held by the thumb and first finger of the right hand and shot over the top of the left hand.

QUIVERS. — In ancient times only the single quiver was made and used by the Nez Percés. The double quiver, with one compartment for the bow and another for the arrows, was acquired from the Crow Indians. This single quiver was about three feet long and was made from the entire skin of an otter, coyote, or cougar.

METHODS OF HUNTING. — The bow and arrow were used in hunting elk, deer, bear, ducks, brant, muskrats, etc.

The spear, which was used largely in hunting buffalo, had a barbed stone point and a long straight shaft of red fir. Buffalo were hunted on horseback, as were deer and elk when the sur-

[1] Ibid., p. 714.

face of the country permitted. A favorite method was to run down deer in the open prairie. Game drives, for deer, were constructed in the hunting grounds. They had long converging wings, with a narrow opening near which hunters were concealed. More often such drives consisted of lines of hunters strung out about sixty yards apart. Decoys were used in hunting deer, wolves, and mountain sheep. The decoy consisted of the stuffed head of the animal and the cape. This head was put over the head of the hunter, who was partly hidden and who imitated the actions of the animal. Elk whistles were made of elderberry wood, while the calls of wolves were imitated directly.

Prairie chicken and other small game were snared with the simple running noose. Magpies were caught in a brush house with the noose at the doorway. Rabbits were rounded up in great drives, especially on the hills near Snake river. Lines of men and boys were stretched out in a long line leading to a net like a seine which was set up on poles and which ended in a corral. Horsemen or footmen beat up the rabbits, many of which were caught in the net and the remainder in the corral.

Coyotes and wolves were caught in deadfalls. A pit was dug and over this a tilted platform, laden with stones and with a heavy log at the end, was supported at the upper end by an unstable prop which was readily displaced when the bait was touched. The figure-4 trap was evidently introduced by the whites, but the T-trap was native. The bait was suspended from the inner arm of the T.

In the case of game, all the animal except the entrails was saved for food. Deer were unjointed, the legs removed, and the back cut into one or two pieces. The head was always left attached to the skin.

There seems to have been very little ceremony in hunting. Offerings were sometimes deposited in certain well-known shrines or in trees to ensure good luck. The horns of deer were sometimes hung upon a branch. When the guardian spirit of the hunter was one that brought skill in hunting, the song was sometimes sung on the hunt. Women who had such guar-

dian spirits would sing while their husbands were on the hunt. The wolf-faith was the one believed to be most beneficial to hunters.

Eagles were seldom shot. They were taken from the nest while young and raised in camp. The first set of feathers was plucked, and a part of the second set; then the birds were set free. Eagles were also caught by concealed hunters. A pit was dug in which the hunter crouched. Over this a false ground was prepared, with three or four small openings. A coyote or some other animal was used as bait. The feet of the eagle were seized by the concealed hunter, while another rushed out and killed the bird.

SKIN-DRESSING. — Deer and most other animals were skinned from a cut made down the belly and down the inside of each leg. The hides were dressed immediately, while green, if it was convenient; if not, they were cleaned, dried in the shade, and rolled up for future dressing. The first thing done to green hides was to remove the hair. A short smooth pole was leaned against a tree, the hide caught over the top, and stretched down over the pole with the knees. The hair was removed with a sort of draw-knife made from an elk-rib with little modification. After the outside had been grained the inner side was treated with the same instrument. The skin was then dried without stretching.

The brain of the animal was placed in a deerskin bag and allowed to dry in the sun; it was then kept till needed. When required for use the dried brain was mixed in water in a willow basket and the hide was soaked over night in the mixture. Next morning the hide was tied to a tree and twisted with a cross-stick until it was as nearly dry as possible. It was then scraped and worked with a disk-shaped spall struck from a bowlder. During this operation the skin was held down with one foot at the edge and stretched toward the body. After two or three hours of scraping the skin was rendered soft and pliable. Finally it was smoked. A small hole was dug in the ground in which a fire was built of dry willow or pieces of rotten wood. The method of building the fire in a hole prevented too

great heat. Then the skin was hung over the fire and smoked for about an hour, when it was ready for use.

If the hide was dried before being worked it was soaked for about three days in the creek and the hair was removed with an elk-horn grainer such as is shown in fig. 5[6]. The implement was fitted with a stone blade, and was not used in working green hides. Except for this preliminary stage the process of dressing dry hides was the same as for green ones. If the hair was to be left on, only the inner side was scraped, but in other respects there was no change. The dressing of skins was the work of the women.

CLOTHING AND ORNAMENTS

The dress of the Nez Percés was of the general Plains type. This type, indeed, prevailed among the Shahaptin, Salish, and Waiilapu tribes inhabiting the middle course of the Columbia, and gave way to the Chinook type only at the Dalles.

The men's dress consisted of moccasins, leggings, breechclout, shirt, and blanket. In warm weather the leggings and shirt were often discarded. The material was deer, elk, and buffalo skins, which were skilfully prepared. This leather clothing was kept very neat, being frequently cleaned with white clay. It was decorated in different ways, with fringes along the seams, with beads, porcupine quills, and paint.

The dress of the women consisted of moccasins, a long loose gown, and a fez-shaped cap. Occasionally the women wore leggings. In general the costume of the women was not so highly decorated as that of the men. The ornamentation consisted of fringes, bead- and quill-work, shells, elk-teeth, bits of copper, etc.

MOCCASINS. — The moccasins of both the men and the women were of deerskin, soft and close-fitting, and provided with flaps that were folded around the ankles and tied with a double thong. The flaps were made of a single piece, and the moccasin proper of another. The piece that formed the moccasin was skilfully cut and sewn. The main seam extended around the outside of the sole, beginning at the inner side of the great toe and termi-

nating an inch or so beyond the center of the heel. At the base of the heel two small strips of additional material were allowed to project in order to facilitate pulling off the moccasin. This long main seam, together with a vertical seam at the back of the heel and a horizontal seam along the middle of the outer side to counteract fulness, were sufficient to make that single piece of deerskin assume exactly the shape of the foot. A tongue was left, which could be bound under the flaps. The moccasins were decorated with bead- and quill-work. The beadwork patterns were mostly floral and fanciful; some, however, were geometric. The quillwork was mostly of the wrapped type laid on in tranverse stripes. The moccasins of the men were generally more highly decorated than those of the women.

LEGGINGS. — The deerskin leggings extended from the ankles well up the thighs and were supported by the belt. Leggings were commonly decorated with heavy fringes along the outer seam and by bead- and quill-work near the bottom. After cloth was introduced and heavy flannel replaced deerskin, the style of ornamentation was changed in that the former fringe was superseded by stiff side-flaps which bore the larger part of the beadwork. The beadwork patterns on leggings consisted usually of an oblong area cut up into triangles of contrasting colors. It is not known how the women's leggings differed from those of the men.

MEN'S SHIRTS. — The man's shirt was provided with long sleeves. It was loose, with a simple opening at the neck, and with an uneven lower edge bearing long fringes. Fringes also decorated the shoulders and the sleeves. Applied decoration consisted of woven quillwork geometric patterns across the shoulders and down the sleeves. The entire front of the shirt was often decorated with small punctuations, usually round and not arranged to bring out any design or figure. Over the shirt was often worn a collar consisting of an entire otter (*Lutra Canadensis* Schreber) skin, the tail hanging down in front. Elaborate breastplates made of beads were also worn over the shirt. The breastplate of large bone beads, illustrated in plate X, 1, was undoubtedly introduced from the Plains. The more common

type of breast ornament consisted of several strings of small disk-shaped beads. These strings were arranged one above the other, the top string being stretched fairly tight and each succeeding string being looser until the lowermost hung nearly to the waist. Often side-pieces of leather, decorated with an outer fringe of scalp-locks or with pieces of otter or mink (*Putorius vison* Schreber) fur, formed a sort of framework for the strings of beads.

BLANKETS. — The blanket was perhaps the most important and valued article of clothing for the men. It was in almost constant use, as a covering for the body, as a lounging robe, as a saddle cushion, etc. The blanket was prepared from an entire elk or buffalo hide, tanned with the hair on. It was elaborately ornamented with painted pictures, and with geometric patterns of bead- and quill-work. Strips of beadwork upon deerskin were often attached to the robes. The art of preparing buffalo robes was one in which the Nez Percés became very proficient. They obtained supplies of the hides during the yearly hunting trips to the Great Plains and traded the finished product with the tribes farther west.

The Nez Percés never wove blankets. Even the simple blanket made of strips of rabbit-skin woven in and out seems to have been unknown. The beautiful woven blankets in the National Museum, collected in early days by Captain Wilkes and George Catlin, are probably to be ascribed to the area at the lower end of Puget sound. The only basis for attributing them to the Nez Percés is the use of geometric designs similar to those on Nez Percé wallets ; but this similarity is not striking enough to overcome the negative testimony of all the early explorers and the direct assertions of the Indians themselves.

HEAD-GEAR. — The man's hat of elk-hide seems to have been a sort of helmet, and is described under armor. A sort of hat, or eye-shade, was made of a strip of hide from the neck of the buffalo where the hair was long and thick. This strip was about an inch wide and was bent to form a circlet. The hair stuck straight out and shaded the eyes.

MEN'S ORNAMENTS. — Ceremonial and war regalia will be

considered in another place. Such simple ornaments as were used for everyday wear deserve mention at this place. Necklaces of bear-claws, wolf-teeth, deer-hoofs, etc., were very much worn by the men. Some of these may have been in the nature of fetishes and charms. Plate IX, 9, 10, show elk-teeth perforated for use as pendants, and 11 shows a bear-claw treated in the same way. Arm- and leg-bands were also worn.

WOMEN'S GOWNS. — A considerable number of specimens of the woman's gown of the Nez Percés are preserved in our museums. Two fine old specimens in the National Museum, one in the Peabody Museum, and several, perhaps not so old, in the Field Museum of Natural History agree exactly in the technique of construction. Judging from these, the ancient dress was a very simple affair, with cape sleeves. It hung straight from the shoulders to the ankles, and was made of two deerskins, almost entire, from which the hair had been removed. One skin formed the front and the other the back of the dress. The side of the skins which had formerly carried the hair were worn next to the body. To form the upper portion of the dress, the tail part of the hide was folded over on the outside, thus making a straight line across the shoulders. When this extra fold was sewed down it gave the appearance of a yoke. The triangular tail-piece, which still retained the hair, was clipped in horizontal lines and kept as a sort of ornament. The sides of the garment were sewed down in a straight seam at each side. A fringe was made along these seams, either from the original material or from a sewed-on strip. The sleeves were capes rather than real sleeves in the greater number of instances. The side seam was continued upward until there was only enough room for the arm. Occasionally the lower part of the cape was really sewed into a short sleeve. The edge of the sleeve was irregular and cut into fringe. Four semicircular pieces were added at the bottom of the dress, in part to fill out the natural inequalities of the deerskins and in part to increase the flare of the skirt. There was no girdle attached to the gown, and no gathering at the waist.

The ornamentation consisted principally of fringes at the bot-

tom of the skirt, at the ends of the sleeves, and along the side seams. Below the waist there extended around the skirt three rows of a sort of supernumerary fringe made by passing narrow strips of deerskin through double slits and knotting them on the outside. These double ribbons did not form close fringes, but were two or three inches apart, resembling the reefing ribbons of a sail. In addition to the fringes, variously colored bands of beaded decoration extended along the undulating seam where the false yoke was sewed down upon the body of the dress. The patterns used in the beadwork were very simple, usually consisting merely of oblong areas alternating in color. Elk-teeth, dentalia, small pieces of copper, and various trinkets were also attached to the dresses according to the fancy of the wearer and with no studied designs.

This type of dress, made, perhaps, with less elegance, was worn by the Paiute women. It was also used by the tribes adjoining the Nez Percés on the west, according to the collections in the Field Museum. It differed but slightly from the women's dress of the Plains area. It was, however, quite distinct from the dress of the Chinook women on the lower Columbia.

WOMEN'S HATS. — The hat of the Nez Percé women was the gayest portion of their dress. It was fez-shaped and ornamented with woven designs which will be described later. Pendants and tassels were often fastened to the double deerskin ribbons on the crown. Curiously enough scant mention is made of this article of attire by early travelers. Several fine specimens are preserved in museums and show that the same form of hat was used by the Yakima, the Umatilla, and other neighbors of the Nez Percés.

The women wore fewer ornaments than the men. They sometimes wore ear pendants in the form of disks made from haliotis shell. Strings of dentalia were also hung from the ears or fastened to the braids of hair.

HAIR DRESSING. — The hair of both the men and the women was worn long, parted in the middle, and braided in two braids, one on each side of the head. The hair of the men was cut

across the forehead, forming bangs. The Kiowa name for the Nez Percés, *Âdalk'atóigo*, means "the people with hair cut across the forehead." The women did not wear bangs, and the hair of the men was in general more elaborately dressed than that of the women. Shells, narrow strips of fur, especially otter and ermine, and other ornaments, were often woven into the side-braids of the men. The parting was very carefully made by a special instrument, a hair-parter, made of a smoothly-pointed stick, from six to ten inches long, with a flat handle usually ornamented with carved profiles.

Depilation was commonly practised. All the beard and mustaches of the men were carefully pulled out. Lewis and Clark [1] point out that depilation with the men extended no further than the beard and mustache, while with the women there was an eradication of the pubic hair.

COMBS. — Combs were fan-shaped and made of narrow strips of wood. Sometimes strips, about six inches in length, were simply laid side by side and tightly wrapped at a point about two inches from one end. The strips were then spread out fan-wise on both sides of the wrapping. The shorter portion served as the handle and was often wrapped with deerskin and decorated. The spread of the longer portion was maintained by lacing strips of deerskin. The points of the strips were rounded and smoothed. Sometimes strips, about twice the length of the upper ones, were bent double and wrapped below the bend. The points were then spread as in the simpler form, while the looped portion made a neat handle.

FACE AND BODY PAINTING. — The painting of the face was a common practice of both the men and the women. In general it had no particular significance. At certain times the face and body paintings had connection with the animal which was the guardian spirit of the man or woman concerned. Examples of this will be given later. Red paint was also used on the eyelids and cheeks to prevent snowblindness. Red and orange were the favorite colors. With these the forehead was painted brilliantly and in solid masses. The scalp exposed by the parting

[1] Vol. v, p. 29.

of the hair was painted red. Often the hair itself was painted red on the crown of the head, particularly in the case of women. Sometimes the colors were applied in lines and dots, but there were apparently no symbolic designs.

Tattoo was not practised. Scarification was of no particular significance, since the torture ceremonies of the Sun dance were entirely unknown.

PAINTS AND DYES. — White, red, blue, and yellow earth paints were obtained from the vicinity of the Grand Ronde valley. The colors occurred in masses of variegated clay and each one had to be carefully separated. It is perhaps significant that the names of these earth paints are quite distinct from the generic color terms. Green paint was made from a slime gathered from creek bottoms, and the name for this paint is the same as the generic name for green. Red and yellow were much used in face and body painting. Pieces of the white clay paint were mixed with saliva in the mouth and rubbed into the hair by warriors about to take the war-path. A white clay was also used in cleaning the deerskin clothing. Shields, parflèches, and other articles of dressed skin were often painted. The paints were mixed in water and applied with a brush made from green willow, or were boiled with a little glue and dried in disks and lumps which were used as colored pencils.

A dye used in staining squaw-grass for basket designs was obtained from Oregon grape-root (*Berberis nervosa* Pursh). The dye ranged in color from light yellow through orange to dark brown, the shades depending on the strength of the decoction. The same term was applied to all the different colors obtained from this root. No information regarding other vegetal dyes could be obtained.

TRAVEL AND TRANSPORTATION

Before the introduction of horses the life of the Nez Percés must have been very different from what it afterward became. According to old natives the custom of going to the Plains after buffalo each year was instituted only after the advent of horses. Before that time war parties only had made the trip. The Nez

Percés first procured horses about 1770, a decade or more before the Indians of the Plains. Since the later trade of the Nez Percés with the Indians of the lower Columbia was mostly in buffalo robes, mountain-sheep horns, and other articles secured in or near the Plains area, the early trade, before the use of horses, must have been light. The absence of horses necessarily made canoes, as well as snowshoes, carrying baskets, etc., more important.

CANOES. — Canoes were of the simple dug-out type (plate x, 7), made from a single log, usually of red fir (*Pseudotsuga mucronata* Sudw.). The bottom was flat, the sides vertical, and there was only a slight tapering toward the ends, which were of the common "shovel-nose" model. The width was about two feet and the length from fifteen feet to more than forty. They were made chiefly from drift-wood carried down the large rivers by spring freshets. Native informants claim that trees were not felled to make canoes. They were hollowed out by fire. For propelling these craft both poles and crude paddles were used. Travel by water must have been heavy before the introduction of horses, but at the time of Lewis and Clark canoes were rather scarce, some large villages being entirely without them. This scarcity may have applied only to the upper Clearwater, which has some very treacherous rapids. Snake river below the mouth of the Grande Ronde could have been readily navigated. According to Hayden the Crow name for the Nez Percés is *A-pū-pe'*, which means "to paddle." This nickname may indicate the former importance of water travel to the Nez Percés.

SNOWSHOES. — Snowshoes were oval in shape, with a framework of vine maple (*Acer circinatum* Pursh) or hackberry (*Celtis Douglasii* Planch), and meshes made with strips of raw elk-hide. They varied somewhat in size according to the nature of the snow, being commonly about eleven inches wide and eighteen inches long. The framework was bent when green and dried before being strung. The mesh was not a cross-woven mesh, such as is used in eastern and northern snowshoes, but was a loop mesh made somewhat after the manner of the sewing thread in coil basketry. A single strip was woven in

loops from the outside to the center. A second and a third strip followed till the mesh became small enough. The snowshoes were strapped tightly to the foot and were lifted bodily in walking, not dragged. This was more or less necessary owing to the mountainous nature of the country to be traversed. One strap passed over the toe, another vertically over the instep, a third from the heel over the instep, and a fourth over the upper part of the heel. The second and fourth straps were tied together. Snowshoes were commonly worn in hunting deer in winter.

HORSE ACCOUTERMENTS. — Saddles were of two kinds, the low ones for the men and the high pommeled ones for the women. Cox[1] says the man's saddle was of dressed deerskin stuffed with hair, and Franchère[2] says it was a cushion of stuffed deerskin, easy on horse and man. More modern specimens resemble the common pack-saddle, the arches at front and back, made from forked branches, and the boards on the side covered with rawhide. Over this a blanket was spread.

Stirrups were well made and resembled strikingly the European stirrup — the bottom was broad and flat and the upper part was covered with green skin which became very stiff.

The bridle consisted simply of a braided horsehair rope which was tied round the under jaw.

The women's saddle had high pommels of elk antler, each pommel ending in a horizontal disk several inches broad. The depth of the saddle ranged from twelve to fifteen inches. This saddle bore a superficial resemblance to the Spanish saddle, which may well have been the original model. The saddles were usually decorated with fringes, and the saddle skirts were often heavily beaded.

Dogs apparently were never used to carry packs, and the travois was unknown. For horses pack-bags of several kinds were used. The wallets and cylindrical carrying bags, already described, were likewise employed, also "medicine-bags" and parflèches.

[1] Cox, p. 84.

[2] Franchère, Thwaites ed., pp. 341–342.

BAGS. — Both medicine-bags and parflèches were doubtless introduced from the Plains Indians, but were found at an early date among the Nez Percés as well as among the Cayuse and the western Shahaptin tribes. Old parflèches are said to have been not decorated. Several old parflèches in the Field Museum have an incised decoration, chiefly in diamond patterns. The designs on Nez Percé parflèches show much similarity with those on Shoshonean specimens. This may indicate the route by which they were introduced, although it seems more probable that the Crows were the transmitters. Typical designs are shown in fig. $5^{1,2}$.

A cylindrical rawhide bag, commonly called the "medicine-bag," is represented in fig. 5^{3}. It was not restricted in its uses, but was used mostly by the women. As a true medicine-bag it formed part of the outfit of the men when on the war-path. The bag illustrated is preserved in the Peabody Museum and is decorated with long elkskin fringes and a painted diamond-shaped design.

CRADLES. — The very young child spent a great part of the time in a cradle which could be carried upon the mother's back, fastened to the pommel of the saddle, suspended from a branch, or leaned against a support. Nothing can be added to Mason's technical description,[1] which follows :

"The basis of the cradle is a rough board, generally hewn out, 3 feet high, 15 inches wide at the top, and not more than an inch thick. It is shaped somewhat like a tailor's sleeveboard, but is more tapering. The board is covered with buckskin, drawn perfectly tight upon the back and across the broad part of the front as far down as the hood, or about one third of the length. Below that the two edges of the buckskin form flaps, which meet nearly over the child. Along the edges of these flaps strings are looped, into which loops a lashing cord passes backward and forward to enclose the child tightly in its capsule. On the top of the back a fringe of buckskin strings is formed, either by slitting the buckskin covering itself or by a separate strip sewed on at this point. A little above the center is sewed the head strap of buckskin, to enable the mother to transport her child or to suspend it when at rest. The hood of the cradle is based upon the

[1] Mason (*a*), pp. 186–187.

flaps of buckskin, but these are entirely concealed by the covering of flannel or other substance. The most ornamented portion of the cradle is the part above the hood; a piece of flannel or buckskin is covered with beadwork, solid, or has figures wrought upon it in various patterns. To the hood are attached medicine-bags, bits of shell, haliotis perhaps, and the whole artistic genius of the mother is in play to adorn her offspring. After the child is lashed in the cradle, a triangular flap of buckskin, also adorned with beadwork, is tied over the child to the buckskin flaps on either side.''

The cradles of the Nez Percés exhibit striking similarities with those of the tribes to the north and west, especially the Spokan and Yakima. The cradles sometimes produced occipital flattening. Many old graves have furnished skeletons showing frontal deformation. Although the Nez Percés say they never followed the custom so common on the lower Columbia of binding a board across the forehead, it nevertheless may have been an ancient or an occasional practice.

WARFARE

War was a very important thing to the tribes of the Shahaptian stock. Of these tribes the Nez Percés were practically dictators in questions of war and peace. The valleys of the Clearwater and Wallowa rivers provided the most favorable conditions of life of any part of the Great Basin area, for they furnished game, fish, and vegetal foods in great abundance. War with the Shoshonean tribes to the south was an unceasing one in which the Nez Percés were aided by the Wallawalla, Yakima, and Cayuse. Hostility seems to have been more intermittent with the Flathead tribes to the north, and there were periods of peace and friendly intercourse. War parties from the Nez Percés invaded the Plains to contend with the Blackfeet and the Crows, but just how extensive were these operations before the acquisition of horses it is impossible to say. The Nez Percés procured horses before the more easterly tribes, and the latter made raiding and horse-stealing expeditions which by the time of the appearance of the early traders amounted to a continual state of war and rendered the lot of the Nez Percés anything but a

pleasant one. In this hostility against the eastern Indians the Flathead tribes, particularly the Spokan and Cœur d'Alênes, made common cause with the Nez Percés. In the annual excursions into the buffalo country, the Nez Percés and the Flatheads joined forces. These excursions started every spring and returned after one year, two parties, one going and one returning, usually meeting on the way. There were three trails: one, through the territory of the Cœur d'Alêne Indians, passed the southern end of the lake of that name and crossed the mountains near the head of St Joseph river; a second trail was the famous Lolo trail, the crossing being made near the head of the North fork of Clearwater river; a third trail, less used, crossed the Bitterroot mountains at Nez Percé pass near the most northeasterly bend of Salmon river. These trails were marked by blazings made with elk-horn wedges. On these great excursions, men, women, and children went, and many fierce battles resulted.

Weapons. — Bows and arrows have already been described. The arrowheads used in warfare were frequently poisoned by being dipped in rattlesnake virus. The war-spear had a point either of bone or of stone, usually lance-shaped but sometimes barbed. The handles were about eight feet long. The war-club was of two kinds: One, having a worked stone head with a point at each end and a groove in the middle to which a handle was lashed with rawhide, is said to have been used exclusively in war. The other was constructed with a common unworked bowlder about the size of the fist, which was sewed in skin and bound more or less loosely to a wrapped handle usually about eighteen inches in length, fig. 5 [5]. It was employed not only in war but also for everyday uses, such as dispatching game.

Armor. — For armor, the shield, the helmet, and a sort of tunic were used.

The shield was circular, measuring about fourteen inches in diameter. The material was elk-hide which was stretched green over a hoop frame and dried. As in the Plains area, the shield was commonly mounted on a tripod when not in use. It is uncertain whether the ceremony of turning the shield toward the

sun was observed or not. The shields were ornamented with paintings, scalp-locks, bunches of feathers, etc. It seems probable that, as in the Plains area, the painted decorations were upon the shield-cover of softer hide.

A helmet, or hat, is said to have been made of stiff elk-hide. The character of this helmet is uncertain. A specimen in the Peabody Museum, shown in fig. 5 [4], represents an article of headgear ascribed to the Nez Percés. Similar specimens are common among the Cheyenne, from whom this piece may, indeed, have been obtained in trade. An oblong piece of stiff hide, measuring about ten by eighteen inches and provided with a circular opening for the head, much resembles a paper crown. This opening was made by cutting the hide along several radii of a circle marked off near one end of the board-like piece of elk-hide. The points thus made were turned up, as was the front flap. The long flap at the back hung down as an admirable protection to the neck. The decoration consists of painted triangle and diamond patterns and stiff fringes.

The body armor was not much worn after the acquisition of horses, although it was probably important before that time. It consisted of a sleeveless tunic of elk-hide which hung almost to the knees. It was very stiff and clumsy, but an effectual protection against arrows. Slat armor was apparently unknown to the Nez Percés although it was commonly used by the tribes of the lower Columbia.

WAR DRESS. — The principal article of war regalia was the war-bonnet. Except for this the warriors wore often only the breech-cloth. Eagle feathers were the only kind used in the war-bonnet. There is no doubt that this article has been in use among the Nez Percés for a long time, although it may originally have been derived from the Plains Indians. Plate X, 1, shows a modern example of the war-bonnet without streamers; the streamers were also used, however. It is clear that the war-bonnet of early times differed much from that used to-day, but exact information on this point is difficult to obtain.

The full war dress is thus described by Ross: [1]

[1] Ross (*b*), vol. I, p. 306.

"It consists of the entire skin of a wolf's head, with the ears standing erect, fantastically adorned with bear's claws, bird's feathers, trinkets and bells. The next item is a wreath of curiously studded feathers, resembling a ruff or peacock's tail, which is entwined around the cranium, and hangs down the back to the ground like a banner; when the chief is on horseback, it floats six or seven feet in the air. The loss of this is the loss of honor. The price of a first-rate war head-dress is two horses.

"The body is clothed with a shirt, or garment of thin dressed leather, cut and chequered into small holes, and painted or tattooed with a variety of devices. A black leather girdle strapped tightly around the waist confines the garment, and holds the mystical medicine-bag and decorated calumet."

A head-dress based on the scalp of an animal was among the oldest forms in this region. At a later date the scalp of a young buffalo, the horns not removed, was made into a head-dress. This type, however, was very widely used by other tribes.

Little information could be elicited respecting the regulations in regard to war paint. The hair was painted white with a clay paint mixed with saliva and rubbed on with the hands. Red and orange seem to have been the favorite colors for face and body painting. The war-knife, and the bone-whistle which was blown only in battle, were hung about the neck.

War horse. — After commenting on their great value, Ross[1] gives a detailed description of the decorations of the war horse by the Nez Percés.

"Those entirely white are preferred; next to white, the speckled, or white and black, are most in demand. Generally all horses of these fancy colors are claimed by the chiefs, in preference to any other, and are, therefore, double or treble the value of others. As much pains is bestowed to adorn, paint, and caparison a war-horse as a warrior himself.

"On one occasion I am now describing, the horse was a pure white. After painting the animal's body all over, and drawing a variety of hieroglyphic devices, the head and neck were dappled with streaks of red and yellow; the mane dyed black, the tail red, clubbed up in a knot and tied short; to this knot was appended two long streamers

[1] Ross (*b*), I, p. 307.

of feathers, sewed to a leather thong by means of sinews ; the feathers, which reached the ground, forming as it were two artificial tails, which, in addition to ornament, served the rider to lay hold of while in the act of crossing rivers. A bunch of feathers as big as a broom, standing some twenty inches above the ears, ornamented the horse's head ; and the rider as well as the horse was so besmeared with red, blue and yellow ochre, that no one could tell what the natural color of either was.''

Musical Instruments

The musical instruments of this region were of the types common to most of North America.

Rattles, as usual, were an important part of the paraphernalia of the dancer and the shaman. A common form, represented by a specimen in the Field Museum, has a slender handle wrapped with deerskin, and at the end of the handle a tassel made of the tips of deer-hoofs. Another kind of rattle consisted of a bag of dried rawhide that contained a few small stones. This bag had a thong handle.

The drum is said to have been unknown before the nineteenth century, its place having been taken by a notched stick bound to an oblong piece of dried rawhide which served as a sounding board. One end of the instrument was placed on the ground and the other was held by the performer in a slanting position. The rasping sound was produced with a stick rubbed up and down over the notches.

The drum was common enough at the time of the first fur-traders. An old specimen in the Peabody Museum is apparently made of elk-hide over a cheesebox-like frame about four inches in height and twenty inches in diameter. The wooden frame is made of a single strip of wood lashed together at the ends. A row of burned holes extends down the center of the strip. The hide is stretched over the frame and fastened with thongs passing through the row of holes in the frame and a corresponding set of holes in the hide itself, and are looped over a thong that encircles the drum on the outside. To this outside cord are likewise attached two sets of cords that cross at right angles on the underside of the drum. On this particular drum

there is no decoration. Others, in the Field Museum, are ornamented with drawings of animals.

The drum-sticks, which were about fifteen inches long, were commonly painted red, and had the head wrapped with deerskin. Each drummer used only a single stick. From two to six drummers played on the drum at the dances.

Flageolets were made from elderberry wood. The hollow cylinders were from fifteen inches to two feet in length and about an inch in diameter. About six inches from one end was the wind passage — a slot about a quarter of an inch in length, with a wrapping of deerskin at each end. Just before this passage the tube was almost stopped with a lump of pitch. Six finger-holes were bored in the middle portion of the instrument, and another hole was near the lower end. This last hole is said to have rendered the tone much sweeter than otherwise. These flutes, as they are commonly called, were used only at night, the young men serenading the girls with them. They were not used in any of the dances.

Bone whistles, similar to the above except that there were no finger-holes, were made of the leg-bones of the sandhill crane (*Grus Canadensis* Temm.). They were about eight inches in length and were carried about the neck. They were used only in battle.

Art

Pictographs. — Petroglyphs have been found at several points within the territory of the Nez Percés, and there is no reason to doubt that these Indians were the makers of them. The petroglyphs occur on cliffs and bowlders, especially where there is a granite outcrop. They were inscribed by several methods: (1) by painting with red and yellow ocher; (2) by pecking; (3) by a combination of these two processes in which a large surface was first painted over and then the figures brought out in tone relief by pecking away the paint.

Perhaps the most famous site of petroglyphs is Buffalo Rock, about eighteen miles above Lewiston, on the east bank of Snake river. This granite rock stands by itself on a small flat at the

mouth of a lateral cañon. A considerable village, named Ilokotbatpi, was formerly situated around it. The rock takes its name from crude but unmistakable figures of buffalo painted with red paint, on the up-river side. Some of these figures have been removed and others destroyed by archeologically inclined vandals, so that only two are now in good condition. Near these buffalo figures are two signs, each with one vertical line and seven horizontal lines on the left side, like the teeth of a rake. These figures are painted in black and yellow paint.

The most interesting group of figures is on the down-river side of the rock. A considerable area of the rock is still covered with a varnish-like brown paint. This covering was removed by pecking and figures formed which stand out in gray against the brown background (plate x, 5). Most of these figures appear to represent men who in some cases have horns on the head, possibly meant for buffalo-horn head-dresses. The arms are long, with the elbows bent and the hands on a level with the broad shoulders. In one or two cases the hands carry wands or bows. The bodies, from the shoulder down, resemble the tail of a fish, the hips being very narrow and the legs short. A mountain goat with greatly elongated horns is represented above one of the man-like figures. In general style these petroglyphs closely resemble those found elsewhere in the Basin area.

On a weather-worn bowlder close by the group just described occur other figures which appear to have been simply pecked (plate x, 4). The mountain goat, the snake (?), and various geometric signs or symbols occur here.

A mile or two above Kamiah, on Clearwater river, a small group of paintings existed until destroyed by railroad grading. The animals represented were men and deer or elk. Paintings and pecked figures are said to occur also at Almota, on Snake river below Lewiston, and on basalt cliffs near the mouth of Imnaha river, in northeastern Oregon.

Pictographs which served the double purpose of decoration and as an aid to memory were commonly painted in colors upon the buffalo and elk-hide blankets and upon the skin tipis. These pictographs show considerable similarity to those of the Sioux.

A painted blanket in the Field Museum of Natural History represents the retreat of Chief Joseph.

Realistic paintings of eagles, deer, etc., were used to embellish the shields and drums. These however were not applied with any order or design. Plate IX, 7, shows the use of realistic art, of a rather low order, to decorate a tufa pipe.

Little is known about wood-carving, but it is doubtful if it was much used. The carved wooden figure found at Tampico, Washington,[1] suggests that wood-carving may once have reached a fairly high development in the plains of the Columbia. Plate IX, 19, shows the curious carved stone figure already discussed.

DECORATIVE ART. — The decorative art of the Nez Percés offers the same complex of ideas of the Plains and Coast tribes that marks the other phases of their culture. The painted decoration on parflèches and medicine-bags partakes strongly of that of the Plains. The decoration came in when the article itself was introduced, or soon afterward. Quillwork and beadwork show some Plains features and some which may be indigenous. Basketry decoration shows strong affiliations with the designs prevalent on the Pacific coast and Columbia river.

Unfortunately the present study of the decorative art of the Nez Percés must be entirely objective. No interpretations of geometrical figures could be obtained. It seems fairly certain, however, that in early times the Nez Percés were very poor in decorative ideas, and that the richness and variety of modern times may be ascribed to absorbed ideas and not to the native culture.

The basket hats of the women were, according to existing specimens, all decorated in some zigzag design having three points at the top and three at the bottom. Plate VI, 15, 16, show two basket hats, one with a checkerwork zigzag and the other the motive shown in fig. 6[3]. This motive was common to the basketry of northern California and of Columbia river. No interpretation of this design could be procured. Variants of this design were used on cylindrical carrying baskets. Other basket hats were decorated with step-zigzag

[1] See H. I. Smith (*b*).

designs. In style of designs there seems to have been little difference between the women's hats of the Yakima, Umatilla, etc., and those of the Nez Percés.

While it is still somewhat uncertain whether the Nez Percés made imbricated basketry, a number of specimens of this art

FIG. 6. — Decorative motives used in textiles.

have been obtained from them. One example shows the human figure, fig. 6[5], and another a design with diamonds and triangles, fig. 6[6,7].

Cylindrical carrying baskets exhibit a variety of simple band decorations, some vertical, some horizontal, and some diagonal.

A stepped design, neatly worked out so that the uncolored background was the duplicate of the colored area, is illustrated in fig. 6 [4]. The designs on these baskets are much the same as those of the Yakima, Wasco, and other tribes of the lower Columbia, except that they are more uniformly geometric among the Nez Percés. There seems to be a steady increase in the proportion of realistic motives in going toward the Chinook area, where birds, fish, and human faces were clearly though conventionally pictured.

In the designs of the woven wallets there was seemingly endless variety. Most of the designs are of the simple geometric figures similar to those shown in fig. 6 [8-34]. These were arranged in "all-over" patterns, in bands, and in combinations of various sorts. Both sides of the wallets were decorated, and there was no relation between the designs on the two sides. One was often simple and the other complex. It seems probable that these simple geometric elements were taken and deliberately worked out in all possible combinations until pleasing effects were produced. In no other way does it seem possible to explain the limitless variety.

Realistic figures are rare, and probably of recent origin. The double-triangle figure, shown in fig. 6 [15-20], probably was derived from the common bird design of the lower Columbia. Arrowhead designs are met with. Even where it is possible to trace a realistic origin, the great development of the figure as an element of pure design renders such an explanation inadequate. In some of the more elaborate figures there are striking similarities to the beadwork and painted rawhide designs of the Plains. Fig. 6 [35-38] illustrate some figures possibly derived from the Plains tribes.

The decorative designs of Shahaptin parflèches (Yakima, Umatilla, and Nez Percé) have been described by Dr Kroeber [1] and compared with those of the Plains tribes. His description follows :

"In their rawhide painting the Sahaptin show a somewhat greater tendency to use designs of the square and triangular type than do the

[1] Kroeber, pp. 175–176.

Kootenay, although such designs are neither very frequent nor very prominent among them. It is probable that the occurrence of this type of design among the Sahaptin is due to direct contact with the Shoshoneans, principally of Idaho. It is interesting to observe that the wide border-stripe consisting of triangles with squares at the ends, which is so typical of the Shoshone, is found among the Sahaptin as frequently in the form of a transverse end-stripe as it is as a longitudinal border. Central squares of no great size occur several times in combination with adjacent acute isosceles triangles. Wide stripes, sometimes longitudinal and sometimes transverse, are not uncommon. When longitudinal, they occur also in the middle of the decorative field. In this case the two resulting halves of the decorative area are usually occupied mainly by diamonds or hour-glass figures. There is very little tendency toward a distinct enclosing frame, as among the Sioux and Blackfeet. There are also very few cases of a repetition, along the longitudinal borders, of the designs in the middle, such as is so characteristic of the Arapaho; but there are cases even of this. Altogether there is hardly any characteristic tribal type which has not some representation among the Sahaptin. The figures are generally large. They are, however, so placed that the white background is comparatively prominent; and the close effect found, for instance, in most Bannock parflèches, where large design elements are also favorites, is wanting. The outlines of the figures are usually marked quite heavily in black or dark blue, much as among the Shoshone and Bannock. Almost half the parflèches have paintings on the side, similar to those of the Blackfeet and Kootenay. The typical form of these side-paintings seems to be a row of angles or V's with the apices directed upward; that is to say, more or less inward as the flattened parflèche is viewed from above. Usually each angle or V contains one or two smaller parallel ones. In a few cases among the Sahaptin, the V-shaped angles are replaced by square U-shaped figures or by diagonal stripes.''

Two examples of parflèches are shown in fig. 5 [1, 2]. The designs of these illustrate the simple geometric quality of most Nez Percé parflèches, and show the use of the square and zigzag.

Beadwork decorations on old deerskin garments usually take the form of bands of checkerwork flanking solid masses of color. Blue was evidently the favorite color; it was usually combined with white. The beadwork decoration of belts, quivers, etc.,

was largely geometric and composed of squares, triangles, and such simple figures. The beadwork decoration of moccasins was on the other hand predominantly floral, but the characteristics of no particular flowers were emphasized. Leaves branched from a stem, and at the end of the stem colored beads massed out what might be taken for petals. If this style of ornamentation was introduced, it would be interesting to know the origin. These floral designs of the moccasins existed in as great variety as the geometric designs of the wallets.

It seems evident that the Nez Percés derived their decorative ideas from a number of sources, but the nature of the original decorative art is very uncertain.

Miscellaneous

Calendar. — According to the ancient calendar there were twelve months in the year. It is uncertain which of these months began the year, so they are here given from the starting point of our own calendar:

1st January. — *Wilū'pup*, meaning uncertain, said to be, "the middle of cold weather."

2d February. — *Ă̆lătămā'l*, "the month of swelling buds."

3d March. — *Latī'tal*, "the month of flowers," *latis* meaning "flowers."

4th April. — *Kakītal'*, "the month of *kakit*"; *kakit* was a favorite food root much like kouse.

5th May. — *Āpāāl'*, "the month of kouse bread"; kouse bread was made from the fresh roots gathered at this time.

6th June. — *Hil'lal*, "the month of the first run of the salmon."

7th July. — *Hasoal'*, "the month of eels," or *Qoĭĭktsal*, "the month of blue-backed salmon."

8th August. — *Taiyaal*, meaning uncertain, possibly "the month of hot weather"; *taiyam* means "summer."

9th September. — *Wauwama aiakal*, "the month of salmon spawning at the heads of creeks."

10th October. — *Aiakal Pikūn'me*, "the month of spawning salmon on Snake river."

11th November. — *Hoplal*, "the month when tamarack (larch) trees lose their needles."

12th December. — *Saxliwāli*, "the beginning of cold weather," or "time of the fall deer hunt."

The four seasons of the year were named as follows:

Spring, *etaiyam*.
Summer, *taiyam*.
Fall, *saxnim'*.
Winter, *enim*.

In the Field Museum of Natural History a calendar tally accredited to the Nez Percés is exhibited. It consists of a group of five small sticks, each with a square cross-section. Upon the sides are lines and dots. Usually six parallel lines are followed by a dot, suggesting the week count. A tally similar to this is said to have been used to register the births, deaths, etc. On one side of a stick the days were shown, on another the years, while the important events were marked in the proper places by circles, etc. The whole idea seems to have been fairly modern. There were no "winter counts" such as are found among the Sioux. Important battles were often depicted on blankets, but there was no orderly graphic record of historical events.

Distance was measured by "bends" of the river or by the number of days required to travel from one point to another.

SIGN LANGUAGE. — The sign language of the Plains was used by the Nez Percés, but was probably acquired after the introduction of horses. The Chinook jargon was similarly introduced by the early fur-traders, most of whom were from posts on the lower Columbia.

PHYSICAL AND MENTAL CHARACTERISTICS. — Little information has been gathered concerning the physical type of the Nez Percés. Boas[1] gives head-measurements of 267 individuals of the Shahaptian stock and finds the cephalic index to average 84.7. Fourteen skulls from the same stock show an average index of 83.2. This puts the Nez Percés in the brachycephalic Basin type, which embraces also the Navaho, Comanche, the Indians of southern Oregon, etc. With the round head goes tall stature. The Nez Percés were not so tall as some of the west-

[1] Boas, p. 391.

ernmost Plains tribes, but they were well above the average height. The average height of 71 men of Shahaptian stock was, according to Boas,[1] 169.7 cm.

Their features are clean-cut and of the finest Indian type. Plate x, 1, 2, pictures two Nez Percé Indians.

In temperament, they were brave, hospitable, and trustworthy. Lewis and Clark and many after them praise their hospitality. The tortures which were inflicted upon prisoners by the Plains Indians were not employed by the Nez Percés. They were more inclined to missionary teaching than most Indian tribes, and at an early date many became devout Christians.

Population

Lewis and Clark's estimate of the population of the Nez Percé nation, excluding the "Yeletpo" which clearly did not belong in the list of bands, was substantially as follows:[2]

1. All those residing along the Clearwater river below the confluence of the North fork, and on Potlatch creek	2,000
2. The Pelloatpallah band residing on the upper Clearwater river and its tributaries	1,600
3. The Kimooenim band on Snake river from the mouth of the Clearwater to the mouth of the Salmon	800
4. The Willewah band on Grand Ronde river and its tributaries	500
5. The Soyenow band on the north side of Salmon river from its mouth to the Rocky mountains and on "Lamaltar" (Whitebird) creek	400
6. The Chopunnish of Snake river from the mouth of the Clearwater to the Columbia	2,300
Total	7,600

The second, or "Pelloatpallah," band could not possibly have been the Paloos Indians, because the habitat is clearly stated as the upper Clearwater, where Lewis and Clark spent several weeks. They speak[3] of this band as "the band with which we

[1] Ibid., p. 371.

[2] Lewis and Clark, VI, pp. 114–115.

[3] Ibid., V, p. 117.

have been most conversant." Only the last band in their list can be divided. The Nez Percés did not extend as far down Snake river as the junction with the Columbia, but only to the mouth of Tukanon creek, somewhat more than half the distance. This latter band may, then, have included the Paloos tribe which inhabited the valley of Palouse river and controlled the lower portion of Snake river. Deducting 1,000 for this possible inclusion of the Paloos tribe there is left a total of 6,600. It is to be noted that Lewis and Clark based by far the larger portion of their estimate on the bands which they actually visited. They allowed only 400 for a long stretch of the Salmon river.

While this estimate corresponds with the traditions of the Indians and seems conservative enough when we consider the large number of geographical bands, it exceeds the rough estimates made after the coming of settlers. Wilkes in 1841 placed the number at 2000. Governor Stevens reported 1880 (adults?) in 1851, and Gibbs more than 1700 in 1853. The Indian agent in 1862 mentioned that 2,800 persons were eligible to draw supplies from the Government. The first real census was not compiled until 1893, on the occasion of making land allotments. The number on the Nez Percé reservation was ascertained to be 1895, while about 140 more were reported from the Colville reservation. The latter were the remnant of Joseph's band, which, when captured, had numbered 450. Thus the total in 1893 exceeded 2,000. In the last fifteen years this total has decreased one fourth, and the Indians now number about 1,500.

The fact that the reservation embraced a large extent of territory, many parts of which were difficult of access, may account for the prevailing low estimates of the population. Moreover, it must be remembered that the agents were concerned only with the Indians living on the reservation. Until thirty or forty years ago many bands roamed at will. Father Cataldo, who as a missionary has dwelt among these Indians for the last fifty years, estimates that in 1860 the population was about 5,000.

The causes of a failing population are not far to seek. Ross and other fur-traders comment often upon the fierce wars between the Nez Percés and the horse-stealing raiders of the Blackfoot,

Crow, and Shoshoni tribes. Firearms made these wars more than ordinarily deadly. Diseases, new to the Indians, claimed many victims. Just before the Whitman massacre, in fact the prime cause of it, a smallpox pestilence swept over the Nez Percé and Wallawalla area, resulting in great loss of life. A second pestilence, less severe, occurred in the late '60's. Since 1870 the death-rate from tuberculosis, owing to the substitution of unclean and ill-ventilated wooden houses for the native mat lodges, has been steadily increasing. Dr J. N. Alley, the physician in charge at Lapwai, reports that fully ninety per cent. of the deaths result from tuberculosis and that any disease of an eruptive nature so weakens their power of resistance that the natives are carried off by tuberculosis within two months of their recovery from the primary ailment. Hardly one person in ten at the present time is free from tuberculosis or does not bear witness of its ravages in scars on the neck or jaw. Unless something can be done to stop the progress of this ever-present plague one of the finest tribes of American aborigines will soon be only a name.

Sociology

The tribe. — The social organization of the Shahaptian stock seems to offer an excellent field in which to study the simple development of the tribe. The stock was geographically a unit. Intertribal festivals and ceremonials were common. Offensive and defensive alliances were made against the Salish tribes on the north, the Crows and Blackfeet on the east, and the Shoshoni Indians on the south. Linguistic unlikeness between neighboring bands was slight, although the extremes of east and west showed marked differences. It seems, then, that the tribes arose from the natural division of the stock according to the geographical areas. This view is supported by the lack of anything like a gens grouping, by the absence of all evidence of migration or conquest, and by a study of the internal structure of the Nez Percé tribe, itself divided into geographic bands.

The Nez Percé tribe was the largest and strongest member of the Shahaptian stock, and was the leader and dictator in affairs of peace and war. It occupied the most important position,

since it had to guard the frontier against the Shoshoni, the Crows, and the Blackfeet. Much of its later dominance may have been due to the early possession of horses, and its consequent superiority in war and advantage in trade. Before this, however, the Snake and Columbia rivers formed a highway through the length of the Shahaptian territory, and their natural advantage at the head of navigation must have been marked.

The Nez Percé tribe was divided into bands upon the village or geographical basis. Each village had its chief, its fishing place, and its strip of territory along the river. Several village groups often came together to make up a war-party, but there is little evidence of close relationship in village groups in time of peace.

CHIEFS. — The position of chief was obtained by election. Although fathers were often succeeded by their sons, this was only because the latter had a strong following and not because the chiefship was regarded as hereditary. There were peace chiefs and war chiefs. Each village had at least one peace chief who held the position as long as he was able to please and control his people. The war chiefs were elected in council and controlled a much greater number of men than did the ordinary village chiefs. There were no female chiefs, nor did women take part in the election of chiefs. Rarely a chief rose to the position of war chief for the whole tribe, and then only after he had saved the tribe in some important war.

The strength of a chief depended on the size of his following. All who desired to reach the position of chief had to be able to gain the favor of the mass. Frequently a young brave would give feasts to accomplish this purpose. After he had thus enlisted a following he would organize a small war-party and have himself chosen as leader. If successful in this initial undertaking his rise might be rapid, according to his skill in diplomacy and debate, his bravery, and his deeds.

The power of the peace chief was considerable in his own village, or over his own people on the march, but he had no power when in the territory of another chief. He was, however, treated with honor. The power of the war chief was supreme on the war-path, but it was only honorary in time of peace.

The council consisted of the chiefs and the old men. There was a village council which helped the chief in administering justice, and a tribal council which met to discuss intervillage matters and affairs of peace and war. These tribal councils might be large or small, comprising a group of villages or the whole tribe. There were also intertribal councils. At these the chiefs met and argued while the pipe was passed around and the listeners sat in a circle. Such intertribal councils were common between the Nez Percés and the Cayuse, Wallawalla, and Yakima, formed to discuss war against the common enemies. Treaties between enemies were also ratified at such councils. Whenever two or more large bands met, such councils might be formed to discuss affairs of moment. The rule for a decision was perfect agreement, so the councils were often long drawn out.

ORATORY. — Oratory was a highly developed art among the Nez Percés, for on this depended much of the power and prestige of the chiefs. The rule of the council was unanimity, and this could be effected only by calm reasoning where facts were to be considered, and by impassioned appeal when the decision depended on sentiment. There was considerable use of gesticulation and a great display of dignity. Statements were concise and concrete. Often a public speaker, or herald, repeated word for word the orations of the chiefs in order that the assembled multitude might hear.

Even when translated out of the soft and pleasing Nez Percé language the surrender speech of Chief Joseph has a great deal of power and pathos:

"I am tired of fighting. Our chiefs are killed. Looking Glass is dead. Toohulhulsote is dead. The old men are all dead. It is the young men who say yes or no. He who led the young men is dead. It is cold and we have no blankets. The little children are freezing to death. My people, some of them, have run away to the hills and have no blankets, no food. No one knows where they are — perhaps freezing to death. I want to have time to look for my children and see how many of them I can find. Maybe I shall find them among the dead. Hear me, my chiefs, I am tired. My heart is sick and sad. From where the sun now stands I will fight no more forever."

DISCIPLINE. — Whatever power there was for discipline was vested in the heads of families, in the chiefs, and in the council. There was no regular police force either in camp or on the hunt. The matters of the household were in the hands of the husband and father. Chiefs had considerable influence, each in his own village, but not outside of it except over his own people. On the war-path a single chief was elected to supreme control, and he could appoint subordinates as he saw fit. Disputes between two villages or important questions of punishment were decided in the council. The council consisted of the old men and the chiefs. It varied in size according to the importance of the matters under discussion and the breadth of the territory affected.

There was, in general, a great deal of freedom of action. The power of the chiefs did not extend to dictation in purely personal matters. Such orders as were given were seldom combated. In sham battles and in dances, the leaders were able to enforce the most perfect order.

In regard to crimes, the procedure and punishment were pretty well established. Murder of a member of the tribe usually entailed blood revenge by the family of the murdered man. The payment of blood-money was sometimes sufficient, especially if the dead man was of a quarrelsome and unruly disposition. Murder of a man not of the tribe was not a crime, except where it was a breach of hospitality. Theft from a tribal member or from a guest was seriously frowned upon, and punishment for the offense consisted of compelling the surrender of the article, or others of equal value, and the infliction of public disgrace, which seems to have been keenly felt by the culprit. For adultery a death penalty was sometimes inflicted upon the man and the woman by the husband, and sometimes the matter was adjusted by the payment of horses, etc. Rape was punishable by death or by enforced marriage. Lying was regarded as almost the worst infringement of ethics, and the epithet "liar" the last insult that could be offered. Public contempt was the punishment meted out to one caught in a lie.

Throughout the Basin area each tribe was held responsible

for outrages committed in its own territory, even if by members of another tribe. A war-party in the territory of an enemy would often offer violence to strangers simply as a back-hand blow at their enemies, when the strangers would have been perfectly safe if they had been encountered in the territory of the aggressors.

PROPERTY. — Property was both individual and communal. To the individual belonged all the implements he had made and used in his work. The men made and owned the nets, spears, hunting apparatus, and weapons of war. The women made and owned the pestles, baskets, etc. Each sex could trade away its belongings, but in case husband and wife separated, all the property belonged to the husband. The horses usually belonged to the men.

In early times the Nez Percés owned a few slaves. They did not buy slaves, merely using as such the male prisoners of war. The women taken in war became the wives of their masters. In any case the children of slaves were free, and the slaves themselves were frequently taken into the tribe. Slaves were the personal property of their captors and could be traded or even killed at will. As a matter of fact they were treated with kindness. It is said that women could gamble away their freedom, but that men were not allowed to do this.

The food supply was a family matter, although there was usually a pooling of supplies to make common store for winter use. Except in the case of large hunts all fresh meat belonged to the hunter who had killed the game. It was considered part of the duty of the chief of a village to see that all the families under his control provided themselves with an ample food supply, since otherwise they might become a public burden.

The long-house was constructed by communal labor and was considered the communal possession of all who lived in it. There was no private ownership in land. Each village owned its special fishing place, and disputes and fights frequently arose when one village infringed the rights of another. There were, however, a number of important fishing places that were considered the common property of the whole tribe. Wallowa lake

and the headwaters of Little Salmon river were perhaps the most important. The large camas meadows near Moscow, Grangeville, and in the Wallowa valley, were also tribal property; indeed these may even be called intertribal property, since the former was frequently visited by the Paloos and the latter by the Cayuse Indians.

Inheritance was through the male line. Much property was given away after the funeral feast, and the remainder was usually distributed according to the previously expressed wishes of the owner. In addition to material property, songs and names were also inherited in the male line.

DIVISION OF LABOR. — A great deal of the ordinary routine work was relegated to the women. They had to dig roots, gather berries, make clothing, baskets, mats, pestles, etc., dress skins, and attend to the culinary affairs — in short, all the domestic work was theirs. The men did the hunting and fishing, herded and took care of the horses, and made nets, weapons, knives, etc. Undoubtedly the necessities of war consumed a large part of their time. The men helped in all the heavy work, such as setting up house-poles, cutting wood, etc.

THE LIFE OF THE INDIVIDUAL

BIRTH. — For two or three months before the birth of a child and for about two weeks after, the woman was confined to the subterranean menstrual lodge, or to its summer substitute. She was not allowed to speak to men or to receive anything from them. All women who were secluded during either pregnancy or the menstrual periods dwelt together and cooked their own meals. They were not allowed to eat food that others had touched. No diet restrictions were placed upon them.

Old women acted as midwives at the birth of children, and were well paid for their services. There seems to have been no birth ceremony, and only the simplest of medical practices. Twins were considered as lucky both to the family and to themselves. The grandmothers of the children devoted much time to their care. The cradle in which the children spent a great portion of their time for the first two years has already been described.

Children were trained to be quiet and obedient, but were kindly treated and seldom had to be punished. After they had reached a sufficient age to understand, stories, myths, and didactic accounts of arts and technology were told them on winter evenings by the men.

NAMES. — Names were obtained in several ways. The child was named from a stock of names which had long run in the family and which were held in reserve. These were probably mostly vigil names of ancestors and deceased relatives. The same name could be applied only to one living person. Occasionally the right to use a name not belonging to the family could be purchased from the family owning it. Such names with marketable value were those that had belonged to some famous chief or warrior, and the right to use the name was usually purchased soon after the former owner had died and before the luster of his renown had faded.

Nicknames were frequent, and, as usual, reflected some physical or mental peculiarity. Some nicknames had a more dignified origin in a feat in battle or skill in hunting, etc. Such names were sometimes made permanent by public notice and a gift to the tribe. The gift was sold and the proceeds used to defray a portion of the expense of a public ceremony.

The most important name was that secured at the Sacred Vigil. Only those who succeeded in obtaining a guardian spirit had one of these names. At about ten years of age the child, whether boy or girl, was sent out on the mountains to fast and keep vigil. If, as a result of this vigil an animal or some other thing appeared to him in a dream, the name or description of this visionary object was taken as the sacred name. Sometimes the dream animal was seen bearing some trophy of the hunt, and in that case the sacred name signalized this. Such a name was *Silūwehaikt*, which means "Eyes-around-the-neck." The warrior with this name was commonly called "Eye Necktie." Another name, *Wisaskĕsit*, means "The-clouds-shade-the-sun." Other names were more simple, as *Himīn-ilpilp*, "Red Wolf."

ACQUISITION OF GUARDIAN SPIRITS. — The sacred vigil was important in more ways than in the securing of a name. The

animal or object which appeared in the dream became the guardian spirit of the child and was intimately associated with the future life. It was supposed to protect the man or woman from danger, often conferring a restricted invulnerability. It was also supposed to endow him with certain physical or mental qualities and pronounced skill in certain things. These extraordinary faculties were such as were especially developed in the animal or object itself. A deer, for instance, would imbue its protegé with swiftness of foot; a coyote or a wolf with skill in hunting; the sun in wisdom and mystical insight. In the case of women, some of the powers conferred on her by the guardian spirit could be delegated to her husband. For instance, if a woman had the Wolf Faith, she would sing her sacred song when her husband was hunting and thus augment his chances of success. Those who were unsuccessful in obtaining a guardian spirit were regarded as unfortunate, and seldom rose to posts of honor and influence.

The method of keeping the sacred vigil was as follows: The child (boy or girl) went up into the mountains, usually ascending to one of the highest peaks. Here he built up a heap of stones and then sat down beside it with his mind steadfastly fixed on the purpose of his vigil. He took no food or drink, and kept awake as long as possible. After three or four days of fasting and vigil he fell into a troubled sleep, during which the animal or object appeared, gave him a name, and taught him a sacred song. There was no way of determining beforehand what the guardian spirit would be, although it seems probable that if the watcher was very desirous of having a certain one he could induce that spirit to enter his dream by keeping his mind fixed upon it. Suggestion and hypnotism evidently played an important part.

Many watchers failed in obtaining a guardian spirit; this was because they allowed their minds to wander, because they became homesick, or tried to while the time away by noticing unimportant objects. It was considered very sacrilegious for a child to deliberately make up a sacred song or pretend that a certain animal was his guardian spirit. Such a proceeding

would arouse the enmity rather than the protection of the animal concerned. One of the myths describes the Beaver and the Muskrat killing a boy who used their names in his song without their permission.

The child kept up the vigil till the animal appeared in the dream or, at most, until five days had elapsed. He then went home, but told no person of the result of his mission. The first occasion that the public had to guess the nature of the guardian spirit was when the boy sang a new song at the Guardian Spirit dance. There was no regular time for the occurrence of this dance, however. There was a close feeling of friendship and intimacy between those who had the same guardian spirit, and a certain amount of coöperation in the Guardian Spirit dance ; but there was no organization that partook of the nature of a secret society.

There were restrictions about killing the animal that served as guardian spirit. Sometimes it could be killed only in a certain way and sometimes only at a certain time. Killing was done only when necessary. For example, a boy who had dreamed of the deer could kill deer only during the fall hunt.

The names and the sacred songs obtained by vigil descended through the family. Some had a right to sing ten or fifteen songs in the Guardian Spirit dance, having inherited them from previous owners. There seems to have been a certain amount of protection and aid derived from this second-hand interest.

In the case of shamans, men and women, the guardian spirits were regarded as of a somewhat higher order, and were drawn from the heavens. The Sun, the Moon, the Clouds, the Eagle, and the Fishhawk seem to have been the protectors necessary before shamanistic power could be inherited, and the Crane before it could be entered into by a person not in the line of such inheritance. Although of *one* faith, the shaman was allied as closely as possible with all the powers of nature.

This ceremony of the sacred vigil was the most important event in the life of the individual. For the boys there were no puberty or other initiatory ceremonies. In the case of the girls, the period of puberty was passed in the menstrual lodge, and

during this time they received instruction and advice from the older women and were not allowed to see men or to touch any object that men had touched. There were sweat-baths for cleansing during this period.

MARRIAGE. — Marriage by purchase seems to have been the prevailing form among the Nez Percés. In this case the marriage was arranged by the parents and a price paid in blankets or horses to the father of the girl. Sometimes the purchase-money was not demanded when the boy was capable and of great promise. In this case the consent of the girl and the approval of the parents had to be gained by the boy without the help of his relatives. Such a marriage was considered more honorable and more to be desired, aside from all financial considerations, than the ordinary marriage by purchase.

Boys sometimes married at the age of fourteen and girls at an even earlier age. There were no restrictions in marriage except in the case of relatives. Even second or third cousins were not allowed to marry. Marriage was usually, but not necessarily, outside the village group. Even marriages outside of the tribe were fairly common, and women captured in war became the regular wives of their captors. The number of wives ranged from one to four, with polygamy far more prevalent than monogamy. The chiefs, however, far from using their position to increase the number of their wives, usually limited themselves to one or two. The number of wives a man might have depended on his wealth, his attractiveness, and his deeds.

Very little ceremony was observed in making the marriage contract, and this little was practically limited to the acquisition of the first wife. As a rule some old man of the boy's family was sent as mediator to the girl's family to arrange the details of time and price. When these points had been discussed and settled, and the appointed time had drawn near, the women of the bridegroom's family went to the home of the bride. The girl was dressed in her gayest attire and escorted by her people to the home of the bridegroom. There was usually a feast, at which presents were given to everybody. About a month after

the marriage the bride's family gave a feast in return, at which presents were given to the guests. To the bride was commonly given the horn-spoons used at the feast. The presents given on one side about equaled those given on the other, although the feast provided by the girl's family after the marriage was of greater importance than that given by the bridegroom. The husband usually took his wife to live with his family, but occasionally lived with hers. There was no trace of payment of the marriage price by personal service rendered by the bridegroom to his father-in-law.

What wooing there was, was conducted in the evening. The maiden was serenaded by her lover, who played softly upon a wooden flageolet outside the tent where she slept. A pretty close watch was kept on the girls, and they seldom made imprudent attachments.

There was no formal divorce, and in case of separation all the property went to the husband. Separation was not very common, however. Instead of divorce or simple separation, the usual method was elopement. In this case the aggrieved husband would sometimes kill both the offending parties, without redress for the family of either. Elopement was common only when the husband was a weakling, unable to assert his rights, or upon the buffalo hunts when it was easy for the runaway couple to put a considerable distance between themselves and the deluded husband. In case of adultery, death could be inflicted upon both the man and the woman. Taken all in all, the standard of morality, both before and after marriage, seems to have been conspicuously high. The crime of rape was not, however, unknown. Sometimes a delinquent girl of whom her accepted lover tired was turned over by him to a party of his friends. Abortion was uncommon. A child born out of marriage was considered a disgrace to the girl's family, and if the offending man was known it was considered to constitute marriage.

BURIAL. — Soon after death the body of the dead person was dressed in fine clothing, and the favorite necklaces and ornaments were used for adornment. The face was painted. In

this condition the body was kept in state, sometimes for two or three days. The body was finally sewed up in a sheet of deer-skin. The opening down the front, where the two flaps of the sheet came together, was closed with a lashing cord sewed back and forth.

The grave was a circular excavation, from three to five feet deep, dug with digging sticks and with the hands. It was usually within sight of the village. If, however, a person died away from home the body was buried there and not transported. In the grave the body was placed in a variety of positions, either flexed or at length. Poles were laid across the grave, and upon these stones were piled to protect the body from wolves and coyotes. Often a considerable amount of property was buried with the dead, including the favorite implements and ornaments of the deceased. Necklaces of dentalia, elk-teeth and bears' claws, pieces of copper, fine scalping knives, and even pestles, have been found in old graves. In later graves quantities of goods derived from the whites, such as guns, medals, hatchets, etc., are common. The killing of horses over the graves of their owners became the usual practice after horses became plentiful. Sometimes the horses were buried over the body, sometimes they were merely killed over the grave, and on other occasions they were skinned, stuffed, and set up as grave monuments. Although the ghost of the dead man was regarded as wearing the ornaments and riding the horses sacrificed at his grave, food was never placed in the grave. Plain cedar stakes were often set upright in the stone heaps over the graves. In time of war the dead were buried under the corral at night, and the horses driven over the graves to obliterate them, so as to prevent mutilation of the bodies by the enemy.

The funeral ceremonies were simple, and are but little known. At the side of the grave the shaman made a brief speech, commenting on the achievements of the deceased and expressing the general grief. There were no chants or funeral songs. The chief duty of the shaman, who was remunerated for the service, was to "lay the ghost." A large part of this ceremony had to be conducted at the new house. Some slight ceremony

at the grave side was probably connected with the cedar sticks that were set up in the stone heap.

The house in which the dead person had lived was torn down. Sometimes it was destroyed entirely, but more often it was merely moved to another spot. Even in winter time the long communal houses were taken down and moved after a death. The expedient of blocking up the part of the house where the person had died was not taken advantage of. The final act of pacifying and laying the ghost was carried out at the new house before it was occupied. The shaman, with much formality, blew smoke from a pipe into all the corners. This ceremony was called *Pasapukitse*, "his blowing the ghost away." The object of the ceremony was to prevent the ghost from moving into the new house when the other people took possession, and if it were not carried out the Indians believed that all who lived in the house would become crazy. Madness was always caused by the ghosts of the dead.

Ghosts were held responsible also for the death of children. It was believed that the ghost would hold his hand over the child's face and thus smother it to death. In order to resuscitate the child it was necessary for two or more medicine-men to determine which ghost was responsible, and then go to the grave of that ghost and try to recover the child's breath. They would blow this breath again into the child and it would recover. Often, however, the shamans could not determine which ghost was responsible, in which event the child remained lifeless. Adults were supposed to die from "bad blood," not from ghostly influence.

All who had touched the body of the dead person had to go through a prescribed sweat-bath cleansing, lasting about a week. This treatment applied to both men and women.

Mourning. — The mourning practices consisted in wailing, in cutting the hair short, and in wearing poor, soiled clothes. Widows cut the hair off on a line with the neck, and could not marry till it had grown again to the bottom of the shoulder-blades. Men also cut off their hair and wore poor clothes after the death of a wife. The hair thus clipped was burned in a fire.

The tails of the horses belonging to the dead man were docked, and the animals were not ridden for two or three years. There seem to have been no food prohibitions. After the death of children the mourning was much less severe, the wailing of the mother being the most noteworthy demonstration of grief.

A month or two after death the family of the deceased gave a feast to which all the friends were invited. Much of the property of the dead person was distributed among the guests at the close of the feast.

GAMES

Accounts of a number of games and amusements have been obtained. In these the Nez Percés do not differ materially from their western neighbors. Wyeth [1] describes a number of games that he witnessed while traveling with a band of Nez Percé and Cœur d'Alêne Indians, especially archery, hoop-and-pole, and the hand game. Other early explorers comment on the horse-racing and sham battles that furnished much excitement.

The hand game (*lopmix*) was played in much the same manner by all the tribes of the Northwest. It was the most popular gambling game. The players were seated in two rows, facing each other, with a fire between when the game was played at night. A log was placed before each row, and each player had a stick with which he kept time to the song by striking the log. There were usually two sets of pieces, each set consisting of two cylindrical sections of the leg-bone of a deer, one being plain and the other having about the center a black ring of deer-skin. Each side was provided with ten counting sticks. As a prelude the leader on one side manipulated the bone pieces — now hiding them beneath his blanket, now passing them from one hand to the other — the other men on that side beating the log and singing a mocking song. Then the leader passed out the two sets of bones to two of his fellow players. These further manipulated the pieces and then held out their closed hands for the leader on the other side to guess which hands held the plain bones. The side that was guessing silently watched the

[1] N. J. Wyeth, pp. 191–192.

dealers. When both sets of bones had been properly guessed the deal changed sides. Losses were paid out of the ten original counters until these were exhausted.

Dice (*tsèxstem*) was another popular gambling game, especially among the women. For this game there were four pieces, two of which were marked with circles and two with zigzag lines. Plate VII, 30, shows one of the pieces used in this game, made from the outside portion of an elk bone. The pieces marked with circles were called *hama*, "men"; and those marked with zigzags, *aiat*, "women" — similar to our "kings" and "queens." A blanket was spread, and two or more players took places at each side. All four dice were thrown at the same time by each player in turn. The number of points in the game was decided before the game was commenced. The scoring was: All four up or down, two points; one pair up and one down, one point. Sometimes the best throw of the four counted one if none of these combinations was made. Culin[1] describes this game among the Yakima and other Columbia River tribes.

Another game consisted in rolling a hoop along a prepared piece of ground and casting shafts so that they would stop where the ring did. No details of this game could be obtained, but it was evidently the common hoop-and-pole game.

A game of ball with bats having curved ends like hockey sticks was very popular. It was played on a large piece of level ground. Goals were formed with two heaps of stones about fifteen feet apart. The ball was stuffed with deer hair. Men played on one side and women on the other. The ball could be advanced in any way but by carrying or throwing.

Another game was played between the men from two neighboring villages, from fifty to a hundred on the side. The contestants formed in two lines and made fun of each other. Then the lines came together with a rush. The feet and shoulders, but not the hands, could be used. The game consisted in kicking, and the line which gave way first, lost. This game was supposed to breed hardiness and courage. It was abandoned soon after the introduction of shoes.

[1] Culin, p. 158.

Coasting down steep snow or grass slopes was accomplished on a deerskin with the hair side next the ground and the front part held up, thus forming a flexible toboggan.

The popularity of horse-racing has been already mentioned. Sport on horseback often took the form of sham battles. Sometimes a famous battle with another tribe would be reënacted with a great deal of realism.

Children had many games, but little information has been collected about them. Tops were spun by the children either with the hands or with a string. The common form of top was a disk of bark through the middle of which was inserted a peg pointed at the lower end and extending about four inches above the disk.

Cat's-cradles and other string games were also common. These were made by the old people to amuse the children, and with each figure went a story.

Medicine and Medicine-men

Shamans. — The position of the shaman was one of much influence, as is always the case when the governmental organization is weak. There were both men and women shamans, and there was no difference in their functions.

The position of shaman seems to have been partly a matter of heredity and partly of guardian spirit. The guardian spirits of shamans were such as lived in the heavens. The Sun, the Cloud, the Eagle, and the Fish-hawk were the patrons of shamans. Not everyone who secured one of these for a guardian spirit became a shaman, although he was pretty surely marked for great success. A vacancy was necessary, through the death of some close relative, before a boy or a girl, already favored by one of these powerful spirit guardians, could become a full-fledged shaman. As a rule the old shaman chose his successor from the candidates, and taught him the songs and formulæ of his faith. It is not clear whether it was necessary for the boy to have the same guardian spirit as his predecessor.

In addition to his (or her) own song obtained at the sacred vigil the shaman inherited songs that had miraculous power to

bring good weather or to cure disease. He also "dreamed" new songs from time to time. Many of the shamans seem to have had genuine hypnotic power over dancers in the Guardian Spirit dance, while others fell into trances of their own accord.

The duties of shamans were the "laying" and exorcizing of ghosts, curing of the sick, the bringing of warm weather, etc. They also had power to spread "bad medicine" or to inflict disease and misfortune upon those who fell into their disfavor. The shamans also took a leading part in many of the ceremonials, although there was no organization of the shamans.

The manner of "laying the ghost" has already been described. It was largely a smoking ceremony. The cure of the sick was accomplished by singing a sacred song when the cause of the illness was hard to find. Certain herb medicines were also prescribed at times. The efficacy of the shaman's song was largely in the mind of the patient.

MEDICINES. — The most common treatment for almost all ailments was the vapor bath. Kip[1] says: "Their prescriptions, however, are always the same, whatever may be the disease, whether ague or fever or small-pox. The patient is shut up in a small close lodge called a 'sweating house,' where he is subjected, until almost stifled, to a vapor bath produced by water slowly poured on red hot stones." To this description it may be added that the sweat-bath was usually followed by a cold plunge. Sometimes warm-water baths were taken, the water being heated with hot stones thrown into a bathing pit. The latter was the common treatment for itch or for other skin diseases. Serious cases of rheumatism or loss of use of the limbs was treated by a sort of sweating roast, similar to the process of cooking camas. The part affected was placed over the roasting pit, packed in rye grass and earth, and thus subjected to almost unbearable heat for as long as possible.

Herb medicines were also much used. A poultice of a certain root, pounded fine, was used on bad cuts or sprains. Bleeding from a wound is said to have been stopped by the application of spider-web. Fractured bones were held in splints made

[1] Kip (*a*), p. 30.

of a number of rods tied together at the ends and covered on both sides with deerskin. Sore eyes were treated with a wash consisting of an infusion of a certain root. Various herb remedies, some having real medicinal value, were resorted to in cases of fever, diarrhea, and other common ailments. Unfortunately most of their materia medica has not yet been identified.

Religion and Ceremonies

RELIGION

The religious ideas of the Nez Percés were marked by simplicity, rationality, and freedom from ceremonial restraint. They seemed to realize the paucity of their religious traditions and from the first eagerly seconded the efforts of the missionaries to instruct them in the Christian faith. Other native religions with which they came in contact must also have profoundly affected their ideas. The ascendant influence of the Plains culture over the Nez Percés during the last century may be explained largely by the superior ceremonial organization of the Plains tribes.

There were no cosmogonic myths. They took the creation of the world for granted, and considered the mountains, valleys, and such geographical features as having always existed. They had no notions of the shape of the earth. Their conception of the world was animistic, according to which there were spirits in trees, in hills, in rivers, and in other natural objects. These spirits had no special names, and were intimately associated with the objects in which they dwelt. When named they took the names of those objects. The spirits were both good and evil. Those residing in trees and streams were benevolent. There were a few trees that rose almost to the dignity of shrines and which were said to hold conversation sometimes with shamans and chiefs, giving them advice on important questions.

One very famous tree on the main trail to the buffalo country received many offerings from hunters who desired good fortune. This tree is mentioned in the mythology of the Cœur d'Alêne Indians as well as by several early travelers. Ross gives a detailed account of this tree, which was situated near Darby, Montana:

"Out of one of the pines I have just mentioned, and about five feet from the ground, is growing up with the tree a ram's head, with the horns still attached to it; and so fixed and imbedded is it in the tree, that it must have grown up with it; almost the whole of one of the horns, and more than half of the head, is buried in the tree; but most of the other horn, and part of the head protrudes out at least a foot. We examined both, and found the tree scarcely two feet in diameter." [1]

After relating the Flathead myth, which explained the origin of the horns in the tree, Ross adds.

"All Indians reverence the celebrated tree, which they say by the circumstances related, conferred on them the power of mastering and killing all animals; hundreds, therefore, in passing this way sacrifice something as a tribute to the ram's head." [2]

There seems to have been a vague sun worship. The sun was regarded as the seat of wisdom and the benefactor of shamans and chiefs. The sun as guardian spirit was familiar in the case of shamans. It was believed sometimes to actually address the shaman. In one case the sun is reported to have said to a famous shaman: "Your knowledge will be exactly like my light." There was, however, no important influence of this sun worship upon art, as the customary sun symbols were seldom, if ever, employed.

Monsters, giants, dwarfs, etc., are mentioned in the mythology but were not regarded as exercising their malevolent influence in the territory occupied by the Nez Percés. Tales of cannibal giants were brought back by buffalo hunters. Such monsters as had formerly lived in the region of the Nez Percés were believed to have been exterminated by Coyote, the culture-hero. Sometimes in the mountains there were little men, not more than two feet high, who answered when any one became lost and called for help. They used to keep their victims traveling round and round for no purpose, but they did no real harm. They were few in number and seldom seen.

Various minor superstitions prevailed. Lewis and Clark

[1] Ross (*b*), vol. II, p. 19.

[2] For a version of this myth, see McDermott, p. 245.

mention the setting fire to trees to bring good weather, and the belief that the moaning of doves presaged the coming of the salmon. A sweat-bath was taken before going on the hunt in order to bring good luck, and sometimes deer horns and hoofs were hung up in trees for the same purpose. There seems to have been no petty ceremonies, however, in the cutting of fish, in the disposal of bones, and similar culinary operations. Ghosts were never called upon for help of any kind. They were feared to some extent, and many people were afraid to go around graveyards after dark. There was no special fear of the ghosts of drowned people or of suicides.

Fetishes were much worn; they were frequently small stones with some freak of shape or color. Stones with holes in them were especially powerful in bringing good luck. Often a boy picked up a curious stone and carried it all his life. Rarely these fetish stones were carved or modified. Shamans often had a fetish which was sometimes carved, as is the curious stone head shown in plate IX, 19. Bear claws, wolf teeth, etc., were also often worn about the neck with the idea of bringing good luck. A spear-head made of gypsum and suspended about the neck is known to have been worn as a charm by one of the older Indians.

All the deeper qualities of the Nez Percé religion seem to have been based on the dream, which was a means of communication between the material world and the spiritual world. It was not, however, the common dream of ordinary slumber. To be sure such dreams, if vivid, might mean much in the way of prophesy or omen, but the greater importance lay in the dream superinduced by revery, fasting, and vigil. In such ecstatic conditions their songs were composed and often sung. In addition to the subjection of the will by the individual himself, there is hardly a shadow of doubt that hypnotism was exercised by the shamans and others, especially in their most sacred and mystical ceremony, the Guardian Spirit dance.

The "Dreamer Religion," which was built up by the great preacher Smohalla, was a natural outgrowth of the primitive religious ideas of the Indians of the Shahaptian stock. Although

his doctrines contributed to the Ghost-dance religion[1] which spread like a conflagration among the Indians to the south and east, yet the Ghost dance itself was not found at all among the Nez Percés. The factors of Smohalla's doctrine which go back to the primitive faith are as follows: First, the animistic conception of the world especially developed into the Earth Mother aspect. Second, the importance of dreams as a method of holding communication with these forces or "wills" in nature. The entire absence of agriculture before the coming of the whites, the presence of great natural supplies of camas and other roots, gave a practical basis for declaring against the operations of civilization. Smohalla said:

"My young men shall never work. Men who work cannot dream, and wisdom comes in dreams. . . . You ask me to plow the ground. Shall I take a knife and tear my mother's bosom? You ask me to dig for stone. Shall I dig under her skin for her bones? You ask me to cut grass and make hay and sell it and be rich like white men. But how dare I cut off my mother's hair?"

This doctrine shows a primitive philosophical scheme of an impressive character. While it was developed after contact with the whites, its purpose was to maintain the ancient ideas and the ancient form of culture.

Several ceremonies having an important bearing on the religion will be described presently.

CEREMONIES

The dances and public ceremonies were largely intertribal. The Nez Percés, Yakima, Wallawalla, Umatilla, and other friendly tribes usually held dances whenever two or more large bands came together, on which haphazard occasions the dancing was varied with horse-racing and gambling. There was, however, a regular round of intertribal dances, now in the territory of one tribe, now in that of another. Certain localities were the traditional dancing places. Early explorers, especially Ross,[2] mention the junction of the Snake and Columbia rivers as a

[1] See Mooney, pp. 708–715.

[2] Ross (*a*), Thwaites ed., pp. 19–20.

favorite rendezvous where thousands gathered to hold their councils and settle the affairs of peace for the year. Such a meeting he describes as "a vast concourse of mixed tribes" where there were "councils, root-gathering, hunting, horse-racing, gambling, singing, dancing, drumming, and yelling." Another communal camp was in the Yakima valley. In the Nez Percé territory there were often intertribal ceremonies held at the mouth of Asotin creek, at the mouth and at the forks of Lapwai creek, and at Kamiah. The dances were usually held in the open, on level ground such as might be found at the mouth of a small stream. Occasionally they were held under cover. A tent, much like the ordinary long-house but partly open around the bottom, was then set up. This dance tent was about fifteen feet wide by sixty or seventy feet long; it was higher than the ordinary house, to permit the open sides, measuring as much as thirty feet at the ridge-pole. In winter two or three fires were kept up. The spectators were arranged around the outside, the women and children being seated in front and the men squatting or standing behind them.

GUARDIAN SPIRIT DANCE. — Perhaps the most important ceremony was the *Wĕĕ'kwetset*, or Guardian Spirit dance. The name means "Dance of the Dream Faith." Although commonly called "Ghost dance" by the Indians of to-day, this dance must not be confused with the modern Ghost-dance religion, which never acquired a hold on the Nez Percés. The dance seems to have been to a slight degree intertribal, but it did not attract such vast multitudes as the Scalp dance, because it was held during the winter, and in many places. The dance was the most essentially religious of any performed by these Indians. It was a concrete expression of their deepest religious ideas.

Both men and women participated. The songs sung were those obtained during the sacred vigil or those inherited. Each man or woman was leader when his or her song was sung. The singer started the song and the dance alone, and the other dancers then took up the words and joined in the singing. There was very decided mimicry of the animal mentioned in the

song, both in contortions of the body and in yelps and cries. There were also some stage devices, such as bladders filled with blood which were broken so as to suggest wounds. Many of the dancers coöperated to make the presentation of the particular animal more striking. Wolves and coyotes would hunt in bands, for instance. The fervor of the dancer who led was often such that he would fall into a stupor and to all appearances be dead. No musical instruments were employed in this dance.

Those persons who had not been successful in obtaining a guardian spirit and a vigil name could not sing an individual song, but they could join in the chorus.

The songs were more or less cryptic, and often only the owner of the song knew what it was about. The animals were not referred to by their everyday names, but by special names. Sometimes there were several such names for a single animal. Following is a song to a wolf, which repeats, in slightly varying ways, "the wolf comes":

Waila yawixne (three times)
Wine nisu
Wax metu wēinèke
Awitsnatsaka
Hila yawixne
Waila yawixne
Ēha yawixne
Waila yawixne.

Body painting and some modifications in the dress were employed to heighten the likeness of the dancer to the sacred animal represented. A dancer representing Coyote, for example, painted his forehead red, and his hair white and red in streaks running from his forehead backward. The sides of his body were also painted red, and the back of a coyote hide was worn as a belt. Another dancer, representing a mad coyote, painted his forehead red, his hair white, and his underjaw and his hands red. The red on the jaw meant the blood of the mad coyote, while that on the hands was supposed to represent the blood of game killed. In most cases, however, only the forehead of the dancers was painted, and this usually in red.

The purposes of this dance were many. Some songs, sung by shamans, were supposed to bring warm weather; other songs were supposed to make game more plentiful or the hunts more successful. Animal calls, such as were used in this dance, were employed in the hunt to entice the animals to come nearer. Many hunters sang their sacred song when they were on the hunt. In fact the dance was supposed to bring the people and the animals and other natural objects into close friendly relations.

A dance called *Isxēp'it* seems to have been somewhat like the Guardian Spirit dance, but was more restricted. It was danced in summer and winter by both men and women. Apparently this dance was owned by a company of persons, and admission was by inheritance or by obtaining a certain dream faith called *Isxēp*. This *Isxēp* was thought to have been a man, and he may have originated the dance. All those who belonged are said to have been much opposed to any form of disorder or quarreling, but there is no evidence that they had any restraining influence over others or that they were a police force in any sense of the word. The dances were not secret. The songs were of the same cryptic mystical nature as those in the Guardian Spirit dance, and were obtained by dreaming. Each dancer had an individual song. From one to three dancers danced with the owner of the song and joined in the singing. This ceremony terminated in a great feast.

WAR DANCE. — In the *Paxam*, or War dance, only the men performed. This ceremony was often an intertribal affair and was held before going to war. It was performed also just before the buffalo hunters left for the plains, usually in the camas grounds of Weippe prairie or near Moscow. Little could be learned about the ancient War dance of the Nez Percés. In the early part of the eighteenth century it was abandoned and the War dance of the Crow Indians substituted. The warriors of the Nez Percé tribe crawled up to the Crow camps under cover of darkness and learned the songs of their War dance. The first War dance obtained from the Crows was later replaced by another. In this later dance, syllables, not words, were used.

In the ancient War dance there were two lines of dancers and

a leader. Time was kept by rubbing a round stick up and down over a notched stick sewed to a stiff piece of hide. The songs were individual, as were those of the Scalp dance and the Guardian Spirit dance, and apparently were much like them. Two of the songs recorded were those sung by some member of the Bear Faith. It is evident that the warriors sang songs according to the nature of their guardian spirits.

An example of one of these Bear songs of the War dance, which has no meaning, is as follows:

A-we-ya-ha-a wel-e-ye-hi.

These syllables were repeated seven times three, or twenty-one times.

A portion of the ancient War dance which was not discarded was the Farewell song of the warriors before every lodge on the night before going on the war-path. The men went from lodge to lodge and paused before each, singing a song and beating time on a buffalo-hide blanket. There were many different songs employed. The women followed behind and joined in the chorus.

Before the War dance there was often a display of trophies and the narration of the history of their capture. There seems to have been no regular ceremony of the "coups," however.

SCALP DANCE. — The *Iwel'wetset* dance was the most important intertribal ceremony among the tribes of the plains of the Columbia. Its English names, the Meeting dance and the Scalp dance, suggest both its intertribal and its vengeful nature. In reality this dance was a triumphal celebration over trophies of war taken from the common enemies of the several associated tribes. Scalps of Blackfeet and Shoshoni Indians were especially desired, and at all times; those of the interior Salish only during the intermittent wars. Efforts were made to get a new supply of war prisoners, scalps, and other trophies for each dance. Hence these dances were usually preceded by war expeditions of greater or lesser degree; some under the leadership of renowned war chiefs with a backing of several hundred warriors, others under the initiative of a young brave eager for personal glory and able to command only a handful of comrades.

Scalp dances were held about four times a year at recognized

rendezvous, now in the territory of one tribe, now in that of another. The most important dance places were at the forks of Lapwai creek, at the junction of the Columbia and Snake rivers, and at a spot on the north bank of the Columbia just above the Dalles.

This *Iwel'wetset*, or Scalp dance, was performed to the accompaniment of songs with words that referred usually to female captives who were to become the wives of the captors, or to the taking of scalps. When there was a pause in the singing some one would interpolate a prose speech, keeping time to the dance. The step seems to have been a simple jumping up and down.

In one of the myths a Scalp-dance song is given which has no special words but only syllables. The song runs as follows:

Hi-yē-ye-a-hē, hī-yē-ye-a-hē.

In this myth Coyote has lost his eyes and the people dance over them. Coyote, disguised as an old woman, is given his own eyes to dance with, and escapes through the crowd.

The general ceremony of the Scalp dance occupied five or six days, the dancing proper beginning at about four o'clock and continuing till sunset. The rest of the time was devoted to the usual feasting, gambling, and horse-racing. The dancing was held in the open, and both men and women took part. The trophies were usually fastened to poles in order that they could be raised in plain sight of the assembled crowd. If any prisoners of war had recently been taken, they were forced to take part in the dance, keep time to the music, and echo the shouts of their captors. Although cruelly tortured during the progress of the dance, these prisoners at all other times were kindly treated and properly cared for. Their wounds were washed after each dance. When the five or six days of the ceremony had elapsed, the prisoners became each the personal property of his captor, and henceforth were well treated. It is important to note that prisoners were never killed at the end of the torturing.

An intertribal Scalp dance of the early years of the last century, which took place at the junction of the Snake and Columbia rivers, is thus graphically described by Alexander Ross:[1]

[1] Ross (*b*), vol. 1, pp. 310–311.

"For this dance, two rows of men, a hundred yards long or more, arrange themselves face to face, and about fifteen feet apart. Inside these, are likewise two rows of women, facing each other, leaving a space of about five feet broad in the middle for the slaves; who arranged in a line, occupy the center in a row by themselves. Here the unfortunate victims, male and female, are stationed with long poles in their hands and naked above the waist, while on the ends of these poles are exhibited the scalps of their murdered relations. The dancing and chorus then commence; the whole assemblage keeping time to the beat of a loud and discordant sort of a drum. The parties all move sideways to the right and left alternately, according to the Indian fashion; the slaves, at the same time, moving and keeping time with the others. Every now and then a general halt takes place, when the air resounds with loud shouts of joy, and yell upon yell proclaim afar their triumph.

"All this is but a prelude to the scenes that follow. The women, placed in the order we have stated, on each side of the slaves, and armed with instruments of torture, continue jeering them with the most distorted grimaces, cutting them with knives, piercing them with awls, pulling them by the hair, and thumping them with fist, stick, or stone, in every possible way that can torment without killing them. . . . The men, however, take no part in these cruelties, but are mere silent spectators; they never interfere, nor does one of them during the dancing menace or touch a slave; all the barbarities are perpetrated by the women."

A night-time variety of the Scalp dance was invented by a man named Tukliks and was called *Tsū'huīkt*. He was the only dancer, but others formed a circle about him and served as chorus. One of the songs was —

Hiyéowīnĕme hiotsasamka wak èwix'neme wak ewix'neme axawī'yai,

which means: "The scalps of people came to my mountains long ago."

Several other dances have been introduced during the last century. The "Squaw" dance of the Crow Indians, called by the Nez Percés *Kopipt*, has been performed during only about twenty years. The Sun dance and the Ghost dance were never in vogue among the Nez Percés; nor were there any torture dances except the *Isxē'pit*, already described.

Mythology

Only a few myths of the Nez Percés have been published.[1] These, however, are enough to give a general idea of the mythology and to furnish some evidence on the question of its affiliations with the mythologies of other tribes. Unfortunately little has been published concerning the myths of the Shoshoni, the interior Salish, and the tribes of eastern Oregon and Washington, where affiliations would be most likely to occur. Consequently no definite conclusions can be attempted.

Coyote is by far the most important figure in the myths, for he is principal in fully half of them. He plays the unequal rôle of culture-hero, trickster, and dupe. His cunning, his magical powers, and his supernatural helpers enable him now to deliver the people from monsters, now to deceive or play even with other animals, but they do not prevent him from occasionally overreaching himself, and falling a victim to his own or to others' wiles.

In the mythology there is no real creation of the world. The world is regarded as having always existed. Coyote is chief of the animals, to whom he announces that the tribes of men are coming up from the underworld, and what he says becomes true. The general scheme of an age of animals preceding the age of human beings prevails here, as among most American Indian mythologies, but is not strictly observed.

One of the deeds of Coyote as culture-hero is the killing of the Kamiah monster, *Iltswewitsix*. This favorite myth shows close similarities with one of the Crow Indian myths, but, if borrowed, is at least given a "local habitation and a name." This monster sucked everything into himself with his breath. Coyote comes across from the Umatilla country and engages in a test of stength with the monster, after concealing himself under a grass bonnet and tying himself down with "Coyote rope" (*Clematis ligusticifolia* Nutt.). He nevertheless is drawn into the monster whom he kills by cutting off the heart. The parts of this monster are still identified with certain peculiar

[1] See Grinnell, McBeth, Packard, and Spinden.

topographical features. Another culture-hero myth tells how Coyote broke the dam across the Columbia at the Great Falls in order that salmon could ascend. In several of its details the myth is identical with the salmon myth of the Thompson River Indians as given by Teit. Coyote also had a contest of endurance with Winter. He built a large house, supplied himself with plenty of food, and then challenged Winter. Winter could hold out only for four or five months. Coyote also killed Logworm, Grizzly Bear, and others who waylaid and killed travelers by special devices; he schemed to have animals who were winning too many races, where life was the stake, defeated by strategem.

No animal other than Coyote appears as culture-hero except possibly Beaver, who, in the Fire myth given by Packard,[1] plays the principal part in stealing the fire. This myth shows the common device of the relay of animals to escape the wrath of the Pines and the Cedars who had previously owned all the fire. Fox appears in many myths as the close companion of Coyote. He has to bear the brunt of Coyote's jests, and usually gets the worst of trade and division of spoils. Occasionally the cupidity of Coyote overreaches itself and Fox comes out ahead as the result of an apparently bad bargain. When Coyote is killed for interfering, he is resuscitated by Fox who merely straddles the body. A similar device is common in the myths of the Cœur d'Alênes. Coyote is helped in his predicaments by supernatural creatures of his own making. He also has the power of changing himself into some other form.

As a mere trickster Coyote wins wives by disguising himself. He steals food for himself and Fox. When Coyote has fallen victim to the wiles of some other animal he frequently wins out and turns the tables upon the other one.

As a dupe he frequently tries to imitate the tricks of others. In the "eye juggling" trick he loses his eyes but finally regains them. He visits his sons-in-law and they obtain food in a variety of magical ways which Coyote tries in vain to imitate, nearly killing himself in the process.

[1] Packard, pp. 327–329.

Other animal tales, in which Coyote does not appear, are of the same trivial sort as these trickster myths.

Tales in which human beings appear are not very common. One Boy-Hero myth has been obtained which shows a pursuit with obstacles thrown in front of the pursuer, which become mountain ranges, etc. One myth tells how a boy ran away with one of Cloud's wives and then frightened off his pursuer with an arm dressed up into a warclub.

Although many incidents common to the mythology of the Plains area occur also in the mythology of the Nez Percés, there is strong probability of their recent introduction, whereas in some of its more fundamental features the mythology shows strong similarities with that of the Pacific coast. For instance, five is in all cases the sacred number, and the youngest of the five is always able to recognize Coyote under any disguise. It seems fairly clear that there is no type of mythology peculiar to the Great Basin area, although the point of origin is much in doubt.

Conclusion

From the foregoing account, incomplete as it is, one important fact stands out clearly. The culture of the Basin area, as shown by one of its representative tribes, was purely a transitional culture. Its elements were drawn in nearly equal proportion from the Plains and from the Pacific coast. Only a small residuum of autochthonous ideas are found when the borrowed ones are excluded. Moreover this division into the matter of the east and the matter of the west was a balanced distribution in almost all phases of the culture. The material culture, the decorative art, the social organization, and the mythology all show a complex of Plains and Pacific Coast types.

Thus, in the dress, the deerskin garments of both men and women were of the Plains type. The basket hats of the women came from the Pacific coast. Among the objects of the material culture, the war regalia and the parflèche and medicine bags came from the Plains, while the stone pestles, the technical processes of basketry, and the fishing gear were derived from the coast tribes. In the matter of houses, the round lodge suggests

the common tipi of the nomadic Sioux, and the long-house the great plank village-houses of the tribes about the mouth of Columbia river. Among the Nez Percés, owing to the demands of environment, the houses of both these types were made usually of mats instead of skins and planks. The social structure of the tribe was marked by the simple geographical or village type, without totemic clans, and with a village chief who divided with the shaman whatever autocratic power there was. This type prevailed along the Pacific coast from California to the Straits of Juan de Fuca. Overlying this village-community form of social organization among the Nez Percés was the tremendous importance of war and the nationalizing office of the war-chief. The necessity of united defence against invading war-parties from the Plains probably brought about the tribal integrity of the sixty or more independent villages. Similarly, the motives used in decorative art may be traced now to the Plains, now to the coast, but in each case apparently suffering a loss in meaning and symbolism. The incidents in mythology show affiliations both with the Plains and Coast types and fail to show a large amount of purely native ideas.

That the Nez Percés were quick at adopting new ideas is shown by their present progress in the arts of civilization. It is a famous story how they even sent a delegation of chiefs to hasten the coming of the wonderful Book of the white man. Their admission that they deliberately abandoned their ancient War dance to take up that of the Crows, after they had surreptitiously learned the music and step of the latter at the risk of their lives, strongly emphasizes the receptiveness of their character.

As to the nature of the native culture before the acquisition of horses, it is necessary to fall back on mere conjecture. It would seem that this early culture must have been more in accord with that of northern California and southern Oregon than with the Plains. The Rocky mountains must have formed a pretty effective barrier against extended expeditions. The entire absence of migration myths seems to argue against the Nez Percés ever having been a Plains people.

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AN HIDATSA SHRINE AND THE BELIEFS RESPECTING IT

BY

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AND

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AN HIDATSA SHRINE AND THE BELIEFS RESPECTING IT

By GEORGE H. PEPPER and GILBERT L. WILSON

Introduction

The Hidatsa Indians form a tribe concerning which little has been published. Early travelers mention their villages and their life and customs, but thus far the only work of any magnitude concerning the Hidatsa that has appeared is one by Dr Washington Matthews[1] who, in 1877, wrote:

"The Hidatsa, Minnetaree or Grosventre Indians, are one of the three tribes which at present inhabit the permanent village at Fort Berthold, Dakota Territory, and hunt on the waters of the Upper Missouri and Yellowstone rivers, in northwestern Dakota and eastern Montana."

The latest Government publication[2] treating of the Hidatsa refers to them as follows:

"A Siouan tribe living, since first known to the whites, in the vicinity of the junction of Knife river with the Missouri, North Dakota, in intimate connection with the Mandan and Arikara. Their language is closely akin to that of the Crows, with whom they claim to have been united until some time before the historic period, when the two separated in consequence of a quarrel over the division of some game, the Crows then drawing off farther to the west. . . . They are now officially known as Gros Ventres, a name applied also to the Atsina, a detached tribe of the Arapaho."

The religious life of the Hidatsa has received little attention, there being but few references to their ceremonies or rituals, and few descriptions of their shrines.

[1] *Ethnography and Philology of the Hidatsa Indians*, Washington, 1877.

[2] *Handbook of American Indians North of Mexico*, Washington, 1907, pt. 1, p. 547.

Rev. Gilbert L. Wilson first visited the Hidatsa with his brother, Mr Fred Wilson, in 1906, and has been laboring among them ever since.[1] He has been successful in gaining the friendship of the head-men, and has collected much ethnologic information concerning the tribe, in addition to a number of their myths. During the summer of 1907 Mr Wilson endeavored to procure a shrine belonging to Wolf Chief, whose father, Small Ankle, was a prominent medicine-man of the tribe. Wolf Chief lives at Point Independence, Fort Berthold reservation, North Dakota. After much persuasion by Mr Wilson and the presentation to Wolf Chief of an oil painting of the shrine by Mr Wilson's brother, Wolf Chief agreed to dispose of it and to relate the stories concerning the various objects that it contained, as well as its complete history. Mr Wilson thereupon purchased it for Mr George G. Heye of New York City, and it is now installed in his private museum.

A word concerning the two Indians Wolf Chief and Good Bird, whose friendly help made it possible to collect the myths herein presented. Both men are full-blood Hidatsa. Wolf Chief is now about sixty years of age and one of the most progressive of the older Indians of the tribe. Although descended from a noted family, and himself a war leader of repute in his youth, he early saw the necessity of conforming to the ways of the white man and has consistently endeavored to do so. He owns a well-built cabin and a fair stock of horses and cattle, and conducts a small trading store. He speaks Hidatsa and Mandan, and reads and writes a little English.

Good Bird is Wolf Chief's nephew, and is perhaps the ablest of the younger men of the tribe. He is a natural scholar and a good interpreter. He speaks Hidatsa, Mandan, Dakota, and English, is assistant farmer to the agency, and interpreter to the Congregational mission.

THE SHRINE

The shrine was in an old earth lodge, the typical dwelling of this region in the earlier days. But seven of these lodges remain

[1] A third member of the party was Mr E. R. Steinbrueck, of Mandan.

at the present time at Fort Berthold, whereas in 1872 seventy-eight were occupied by the Arikara, "Gros Ventres" (Hidatsa), and Mandan at this agency; but even then there were ninety-seven log cabins occupied by Indians.

In the accompanying photographs (plates XI, XII) the interior of the lodge may be seen with the shrine in position. The upper figure of plate XI illustrates the earth lodge of Crow Heart, the most recently built of the seven lodges now standing, not the lodge the shrine was in. The turfs with which it is covered are shown; the rain in time will make this a uniform layer. An old bull-boat frame covers the smoke-hole. In old times the roofs of these lodges were gathering places for social chat, for smoking and the like.

The shrine proper consisted of a framework of four posts thrust into the ground about a foot, and two platforms, a lower and an upper one. The lower platform rested on two cross-poles upheld by four projections on the sides of the posts. The earth lodge in which it was installed is about forty feet in diameter. The shrine stood in the rear, back of the fireplace, close to the sloping roof. The two forward poles were six inches taller than the two rear ones, the difference in height being necessitated by the sloping roof of the lodge. The accompanying diagram (fig. 7) shows the position of the shrine and its relation to the fireplace and lodge entrance.

The upper platform, consisting of four thin boards, rested on two cross-pieces. This platform held a parflèche bag that contained two human skulls and a large wooden pipe which will be described in detail. Under the skull-bundle was a loose cushion or pad of an aromatic plant, as much as might be grasped in the hands, dried and laid down without order, like a handful of grass or hay. Specimens of this plant were shown afterward to Mr Wilson and are evidently a species of pennyroyal. Much emphasis seemed to be placed upon the fact that it grew in wet places. It is believed that it was used in the ceremonies of the shrine because it is an aquatic plant, and, like the turtle-shell, is therefore suggestive of water, and hence proper to be used in divinations for rain. Wild sage is a common mystery plant with

the Missouri River tribes, but it is not known whether the use of the pennyroyal was common in Hidatsa ceremonies. Under

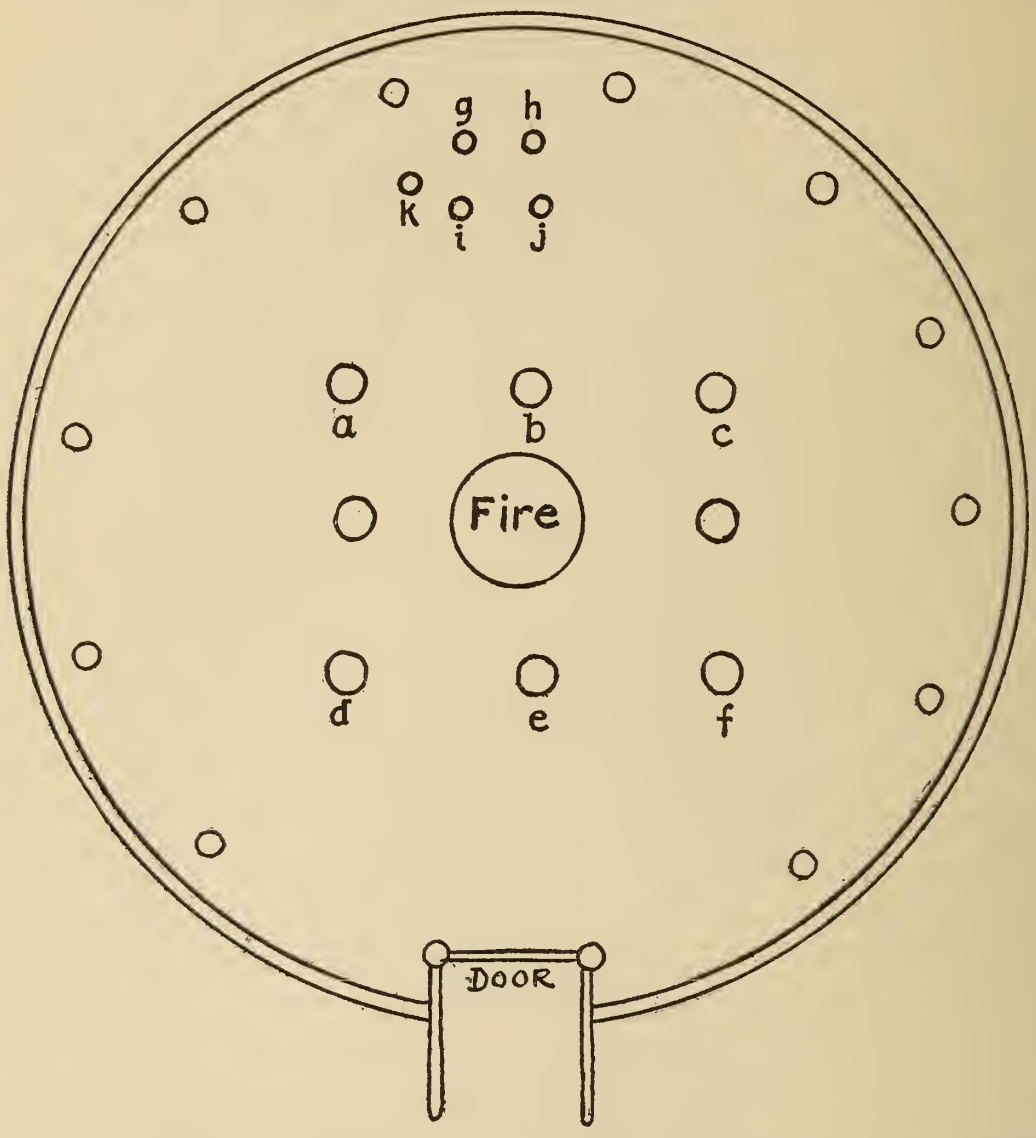

FIG. 7. — Plan of earth lodge, showing position of shrine. (*a*, *b*, *c*, *d*, *e*, and *f* are the posts on which rest the beams that support the lodge roof. *g*, *h*, *i*, *j* are the four shrine posts, and the circle (*k*) to the left is the cedar post holding the medicine-bag. The central circle represents the fireplace.)

the aromatic pad were three calico cloths, with similar pads or layers of pennyroyal between them.[1]

The lower platform, which is in a single piece, rested on two short round poles, upheld by projections as already mentioned.

[1] Good Bird called this a "physic plant." I am unable to give further data of its use in mysteries, if such use does obtain. Its medicinal use is still common. Dixit Good Bird, "*Mater omnis Hidatsa, puerô natô, ad menses resumendas hac herbâ utitur.*" — G. L. W.

This platform contained a buffalo-skull with eagle-feather attachment (the buffalo-skull is named "Oldest-whose-ears-hang-backward"), a turtle-shell, such as was used by the first Eagle-man in divinations to bring rain; an eagle-wing fan, and a felt hat, the latter an offering made years ago by a young Indian. These objects reposed upon a layer of the aromatic herb, which in turn rested on four neatly folded cloths that had been laid on the platform.

The articles mentioned constitute the shrine and the sacred things. Besides these, however, there were a number of offerings made from time to time in honor of the spirits of the shrine. These offerings consist of two robes of buffalo calves and a number of strips of calico, amounting in all to seventy yards.

One of the buffalo-robes is "golden yellow" in color, and was thrown over the upper part of the shrine, completely covering the skull-bundle. Wolf Chief said that a robe of this sort was worth a good horse at a time when other robes sold at a very low price, for only three to six robes of this color were taken by the tribe in a year's hunt. Over this robe the one of ordinary color was thrown; above this was a heavy woolen trade-blanket, then came six layers of calico of various colors.

The buffalo-robes are old and were taken from Fort Berthold to Point Independence twenty years ago. The calico offerings now on the shrine have been made since that time, as the originals were thrown away when the shrine was moved. There were two strips of calico which were draped over the left part of the shrine and extended almost to the floor. A piece of calico was draped from the central part of the back of the upper platform to the side-posts, and there was one on either side, draped in the same way.

The Hidatsa believed in the thunderbirds[1] which brought rain; their scream or the roaring of their wings was thunder, and the flashing of their eyes the lightning. It will be noted that most of the shrine objects have to do with rain — pennyroyal grows in wet places, and the turtle lives in the water. The

[1] The thunderbird was usually an eagle, but not always so. In one myth the wren appears as a thunderbird. — G. L. W.

eagle-wing represents the original Eagle-men, who, although not definitely so stated, were doubtless thunderbirds. The skulls are those of the original Eagle-men. The buffalo-skull was used in prayers for the appearance of the buffalo herds. It will thus be seen that, with the exception of its use with the medicine-pipe for driving away enemies, and in the treatment of the sick, the shrine is a food-and-drink shrine, and was thus principally used. Rain was prayed for to save the growing crops, and the herds were prayed for that the tribe might have meat; this will be noted in the Story of the Skulls.

At the left of the shrine stood a cedar post supporting a medicine-bag, which hung on a natural limb projection. This medicine receptacle is of parflèche and was made by Wolf Chief's mother. The contents may be divided into three series.

Series 1 is a bag containing a bearskin with a bunch of wild turnips; a desiccated bear-paw with eagle-down and two small feathers; a patch of buffalo-hair such as the animal sheds in summer, with two bear's claws, a bear's tooth, and a lock of human hair.

Series 2 contains a wolf-skin painted with a band of red and having a bunch of white feathers; a coyote-skin; a wolf-claw necklace; a human scalp, and a medicine-pipe.

Series 3 contains three small stones, called "buffalo stones." The explanation of this singular name will appear later.

It will be noted that the three series preserve a regular order. Series 1 is the Bear group and pertains to eagle hunting; Series 2 is the Wolf group and pertains to war; and Series 3 consists of personal medicines only. These subjects are dwelt upon in the myths that follow.

To understand these various medicine objects and the myths relating to them, let us examine them in the two groups into which they naturally fall: I, The shrine objects and their myths. II, The medicine-bag objects and their myths.

THE SHRINE OBJECTS

THE SKULLS. — The skull on the right side of the bundle, as one faces the shrine, is that of a person of middle age. All the

teeth are broken or missing, but there is no appreciable absorption of the alveolar processes. The lower jaw is missing, but the right condyle has been bound to the right malar bone with a deerskin thong. The entire cranium has been painted with red ocher, and the frontal bone, the parietal eminences, and the occiput are polished from handling. Other parts also are more or less polished, which would seem to indicate that the cranium had been considerably used in ceremony.

The second skull likewise was painted red and showed the same polished surface as the one just described. The lower jaw is missing, as are also the front teeth; otherwise the facium is perfect. The base of the cranium has been cut away and the edges ground smooth. The line of cutting begins at a point near the mastoid processes and extends to the upper part of the occiput. Its use is explained in the skull myth (page 293).

These skulls retain fragments of dried tissue, and their condition would indicate that they had been prepared for ceremonial use shortly after death.

The parflèche bag of buffalo-hide in which the skulls are placed is decorated with primitive designs painted in blue and red.

MEDICINE-PIPE. — The pipe, which rested upon the skulls, is made from the central portion of a hickory log, the drilling passing through the core or heart. The extreme length of the pipe is nineteen and three-quarters inches. The mouth-end is one inch in diameter. Four inches from this end a shoulder encircles the stem; it is half an inch high and averages seven-sixteenths of an inch in thickness at the edge. From this projection the stem increases in size until the center of the pipe is reached; it then decreases toward the bowl. The stem from the mouth-end to the shoulder is tubular in shape. From this point to the opposite end it is square, but the edges are rounded to such an extent as to give the sides a rounded appearance. The stem measures an inch and three-quarters by two inches at the central part.

The bowl is of the flaring type, with a depressed platform surrounding the opening or bowl proper. The platform is oval, and measures four and three-eighths inches by four and three-

quarters inches. The rim averages half an inch in width and rises five-sixteenths of an inch above the platform. The opening is an inch and three-quarters in diameter and contains a cylindrical piece of limonite which practically fills it. This end of the pipe is squared, and the height, including stem and bowl, is three and a quarter inches. One side of the stem has checked, forming a seam half an inch in width. The pipe still retains a coating of red paint, every part having been colored.

There are no evidences that would indicate the use of this pipe for smoking; there is, in fact, a thick layer of gum in the bottom of the bowl. The chief function of the pipe seems to have been the overpowering of enemies; this is described in the Story of the Two Skulls.

The accompanying illustration (plate XIII, *b*) gives a general idea of the form of the pipe.

BUFFALO-SKULL. — The buffalo-skull is perfect with the exception of the left part of the upper jaw. The lower jaw was not used. The horns and all parts of the skull are painted red, but it is devoid of design. About each horn a strip of calico has been tied, also an offering consisting of eagle wing-feathers formed into a sort of fan by a skewer of wood passing through the proximal end of the quills. There are six feathers in the group on the left horn and five on the right. Those of the left group are divided into two parts by a piece of cloth which serves also to hold them in place on the stick. The feathers of the other group are not bound.

TURTLE-SHELL. — The shell is that of a water turtle, which has not been painted or otherwise marked. The turtle was allowed to dry after death, as the skin of the legs, neck, and tail is desiccated.

EAGLE-WING FAN. — The eagle-wing fan used in connection with the shrine, and which rested on the lower platform, has a piece of cloth wrapped about the lower end to form a handle. This is held in place by means of strips of red strouding and other cloth.

EXPLANATION OF THE SHRINE OBJECTS AS GIVEN BY WOLF CHIEF AND TRANSLATED BY GOOD BIRD

Myth of the Two Medicine-skulls and of the Medicine-pipe

"This tale I tell:

"There were once two spotted birds,[1] Eagles. They lived far off in the west, in the Rocky mountains. They loved the Indians and wished to join them, that they might lead the people and help them. Thus they planned; and they told their wish each to the other. One said: 'I will become a member of the Shi-wa-liu′-wa tribe.'

"The other said: 'I will become an Hĭdăt′sa.'

"And so they chose each a mother, and, as babes, were born into the tribes of their naming. They grew up and remembered when lads that they had been Eagles. The Hidatsa did not forget his friend, but found he could not go to him because the two tribes were at war. This the lads had not known when they were Eagles.

"When he became old enough to take part in war the Hidatsa became a great medicine-man. When the warriors of his tribe went out to fight their enemies and the enemies seemed about to prevail, he could put them to flight with his medicine-pipe. For he had a medicine-pipe that he would roll along on the ground toward the enemy, singing the meanwhile, and the enemy would flee.

"When the people were hungry or starved, Eagle-man was ready to succor them, for he thought, 'That is why I came.' He would take his medicine-pipe out of its bag and burn incense, holding the pipe in the smoke. He would put buffalo-fat in his palm and grease the pipe, and then put the pipe back into his medicine-bag and hang it up again. Then large numbers of buffalo would come near the village, and the people would go out and hunt them. Although he was a great medicine-man

[1] Wolf Chief explained that the tail-feathers of the golden eagle are white with black tips in the first two years of the bird's life. After that the white portion becomes mottled or spotted. The "spotted birds" were therefore old or *ancient* eagles. — G. L. W.

and had once been an Eagle, he lived just as the Hidatsa lived, for he liked their ways. He built himself an earth lodge in the village, cleaning the ground round about and picking up every stray chip and stick. About the door and around the lodge he leveled the ground, and likewise the floor within.

"His medicine-pipe he hung up in his medicine-bag at the back of the lodge on the farther side of the fire. When any one came into the lodge, he might pass to the right or to the left of the fire and sit down; but Eagle-man would not let him pass between the medicine-bag and the fire, nor permit any one to sit there, for this would dishonor his medicine. Eagle-man was very holy.

"Often in midsummer there was little rain, and the gardens would be threatened with drought. The village chiefs would come to the medicine-man's lodge and implore him to bring rain. He would then take down his medicine-pipe and burn incense. Coals would be taken from the fire and laid in a piece of pottery; this the medicine-man would set before his medicine, placing the incense on the coals. He would then hold his pipe in the smoke, and going thence to the roof without, would offer the stem to the four quarters of the earth. Soon clouds and lightning would come, and rain; and in this way the fields grew. Thus Eagle-man performed good deeds for the Hidatsa.

"The other Eagle-man, who lived with the Shiwaĥúwa, knew what his friend was doing, for he too was holy. He did not live in an earth lodge, for these were not built by his tribe. Yet he believed his own way of living to be much better than that of his friend.

"'I move from place to place,' he thought, 'always camping on new ground. I drink fresh, pure water from bubbling springs. I always have plenty of meat to eat — meat of freshly killed buffalo and other animals. And I have abundance of fresh air. My friend who has been born among the Hidatsa cannot live so pleasantly. He must live in a stuffy mud house, always stay in one place, and look upon the same scenes and do the same things every day. I am sorry for my friend. But as our tribes are at war, I will gather the Shiwahúwa warriors and fight the

Hidatsa, and my friend will be killed. Then I will take his skull and bring it back with me; and he will then stay with me.' And he marshaled his tribe and started forth to war.

"Now the Hidatsa Eagle-man was also holy, and knew what his friend was thinking.

"'My friend,' he thought, 'wishes to kill my body so that he may keep my skull with him, for he thinks his way of living is best. But in this he is wrong. I lead a much better life than he. I do not live in a tent, but in a fine room that is always cool in summer. I always have plenty to eat. There are always corn and vegetables stored away for winter, and in the Missouri river there is abundance of water, fresh and sweet.[1] This is far better than drinking spring water as my friend does. I know what the springs are like. Snakes wash in their waters and foul them. Nor has my friend any cool earth house to live in; he merely goes camping around in a tent that the wind may blow through. No, my way of living is better. I must not let my friend keep my skull. I must get and keep his skull. I will call my tribe and bid them make ready for war.[2]

"He then went out of his lodge and called the Hidatsa warriors together.

"'Make ready for war!' he commanded. 'Your enemies are coming in great numbers to fight you; they want to make you slaves! Make plenty of arrows. Get ready your shields and prepare to fight. The enemy will come in four days!'

"He went back into his lodge and sat thinking. He was very holy, and thus he thought:

"'I will make my friend come hither and meet me to-night; he is now not far away.'

"So when evening came he made ready a feast as if he expected a guest. He pounded up some dry meat and put it in

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[1] There is a meaning here in this contest of the drinking waters. The Missouri river is muddy in appearance and uninviting to even a thirsty man; but being fed by the snows of the Rocky mountains the water is sweet and cool. The silt held in solution is mineral in origin. Typhus is rare in the Missouri valley. — G. L. W.

[2] The Hidatsa may have been mocked by their enemies because they were agriculturists. Wolf Chief, at this point in his story, took a lively satisfaction in emphasizing his own tribe's superior native culture. — G. L. W.

a platter made of wicker, like a basket. He filled a bowl with his favorite food — corn, dried beans, squash, and fat cooked together — and set it aside as for a coming friend. Then he said to himself, 'I will give my friend nice clean water to drink.' So he filled a wooden drinking bowl with water freshly brought from the Missouri. Next he filled his medicine-pipe with native tobacco, and was ready to receive his friend.

"He sat in his lodge waiting. In his thought he willed that his friend be near; and at once he knew that he was outside the door.

"He said aloud, 'Friend, come in!'

"'Ho!' responded a voice; the door opened, and the Shiwaĥúwa Eagle-man came in and sat beside his friend.

"The Shiwaĥúwa spoke first.

"'My friend,' said he, 'I have come to see you. And this is why I come: You live in a dark unpleasant house. You never journey about, but always stay in one place; you eat dry vegetables and breathe stuffy air; but I make journeys continually; I always have plenty of fresh air; I have good fresh-killed meat and water from the springs. So I have come after you, for I want you to come with me and I will keep you near me.'

"Then the Hidatsa answered: 'My friend, you do not reason well. Your living is not so good as mine. We were born, you and I, among the Indians that we might help them — and this I do. I live here quietly with my tribe. I am a great medicine-man. I make great rains so that the fields grow. I cause the buffalo herds to come near the village. All the people honor me. All that I eat is clean. But you eat anything — skunk, badger, wolf, and all other unclean things. Now I want to show you what I live upon.'

"He reached for the wooden drinking bowl, over which he had laid some sweet-smelling pennyroyal so that the water was fragrant. This he handed to his friend, who drank it. He liked it well.

"The Hidatsa Eagle-man now handed to his friend the powdered meat, saying, 'When I eat meat I do not devour it fresh and bloody, but dried and powdered, thus.'

"The other ate all the powdered meat, and when he had finished, said: 'Friend, I like your dried meat well.' But as he spoke he shook, and seemed to weaken, as if his body had experienced some change — as if his medicine were less powerful than that of his friend.

"'But I have even better food,' said the Hidatsa; and he gave his friend the corn and vegetables.

"The other ate eagerly, as if he feared he were losing his spiritual power.

"'Now,' said the Hidatsa, 'you know that the foods I eat are all good.' Then he took up his pipe and said, 'If I want to smoke, I clean my pipe, fill it full of good sweet tobacco, and smoke. I want you now to smoke with me, that you may see my way is best.'

"He lighted the pipe with a coal, and when he had drawn in a deep whiff, he held out the stem to the other's lips.

"His guest took the pipe and put it to his mouth, but with difficulty. His hands and body shook as if he were chilled; but he managed to puff, crying, 'Friend, it is good; very good; very, very good.'

"'Well,' said the Hidatsa, 'you see now that I have good food to eat, and that my ways are best. And now, my friend, I want you to come and stay with me, so that you too may have a good home, good food, and good tobacco. Promise me that you will come and stay with me.'

"'I will come,' said the other. 'Listen! On the fourth day from this, I will come with my warriors. Then our tribes will fight, and I shall be surrounded by your men and overcome. However, warn your warriors not to cut my body to pieces nor mutilate it with their arrows.'

"He then arose, passed out of the door, and disappeared in the night.

"The Hidatsa did as his friend had bidden him. He called his warriors and said, 'When the enemy comes there will be among them a medicine-man, very brave, who will be found fighting always where danger is greatest. But if you wound him, or he appears to be hurt, do not try to kill him, but wait for me.

When I run up to him and touch him with my medicine-pipe, if he is wounded only a very little he will die.'

"As was predicted, on the fourth day, at early dawn, the enemy appeared. The fight was on Knife river, for there our great village then stood. The enemy was in great force, warriors covering the whole of the ground that rises near by like a long hill.[1]

"The Hidatsa Eagle-man led out his warriors. 'Be men!' he cried. 'Be strong! Fear not to fight!'

"Before it was over the battle extended to both sides of the river. For a long time it was doubtful who would be defeated; but at last the Hidatsa won the day. They forced back the enemy, killing many. In the forefront of the battle fought a warrior, who covered the enemy's retreat. When the Hidatsa shot arrows at him, the shafts would not enter his body, but passed around him. So they surrounded him and awaited their leader, who came running up, crying, 'Stop! Stop! The battle is over!' He ran through the circle of warriors and approached the surrounded warrior. Taking his medicine-pipe from its pouch, he held it out to the strange warrior's lips, but when it touched him the warrior's body shook, he staggered, fell, and died.

"The Hidatsa knelt beside his friend's body, drew a knife, and began to cut off the head. When he came to the neck bone he found it to be of choke-cherry wood and hard to cut.[2] So he broke it off.

"Meanwhile the enemy were fleeing across the river, making a great noise as they splashed through the water. Since that time that place in Knife river has been called *Mini-hábua*, Noisy Waters, because of the commotion made by the enemy in crossing.

"The Hidatsa brought home his friend's head and cleaned the skull, and when it was dry took it into his lodge. The body

[1] Good Bird here translated simply "hill"; but it is evident that the line of foot-hills that rises a half mile or more from the river is meant. Several old village sites, some of them ancient, are found near the mouth of Knife river. — G. L. W.

[1] The Missouri Valley tribes hold the choke-cherry to be a sacred plant; it figures in their myths much as the myrtle does in the mythology of the ancient Greeks. — G. L. W.

he laid out on a hill,[1] sewed up in a skin.[2] In the skull he made his medicine; it was kept hanging on the wall,[3] neatly covered with robes, and it was always treated with honor.

"When the Hidatsa became old he put an aromatic herb [pennyroyal] in a bowl of water until it was sweet-smelling; he drank of the water and rubbed it over his body, and became a young man again. But when he grew old a second time, he said, 'I am tired of living among men. I want to go back whence I came. I long to live again with my friend as I did before I entered this present life.'

"Then he called the heads of the people together and said to them, 'I am now about to die. When I am dead I want you to take my skull, take out the brains, wrap the skull neatly in a skin, and keep it hanging beside the skull of my friend in a place of honor.'

"He then made his bed on the floor of the lodge and lay upon it. He called the leaders of the people about him, and continued:

"'Now I die here. But before I die, I make you a promise. My skull and my friend's skull shall be the medicines of my band, which is called *A-wa-ti-há i'-ta-ka*, Old Band. You shall choose a trustworthy man to be keeper-of-the-skulls, and he shall keep them in his lodge. And so long as my skull is thus kept in honor, my spirit will remain with it to help the people and be their guide. If food is offered me and any of my own band shall come and eat it, no harm shall come to them. But there shall always be a keeper chosen out of my band to keep the skulls in honor; and when a keeper dies another shall be chosen in his stead. Now these are the mysteries which the keeper shall perform before the skulls for the members of the

[1] There are several bodies exposed on a hill near Wolf Chief's cabin. They are deposited in roughly nailed boxes and laid out on the ground. As such boxes would be beyond the skill of the earlier natives, and as without such a protection wolves would eat the body, we may presume the dead Eagle-man to have been given a scaffold burial. — G. L. W.

[2] A green hide was often used for this purpose. In drying it contracted and set taut about the enclosed body. — G. L. W.

[3] The usual place for an Hidatsa's medicines is on the wall in the rear of his lodge. We may presume that Eagle-man so kept the first skull. — G. L. W.

band. If enemies shall come against you, let the keeper take my medicine-pipe and roll it on the ground toward them, singing the while this holy song which I now teach you. If he will do this, the enemy will be overcome and will flee.

" ' Again, if drought shall come and the fields wither and dry up, let the keeper take down our skulls, mine and my friend's, and set them on a bunch of aromatic herbs [pennyroyal] and sprinkle on them a little water, and there will be rain.

" ' Again, if the people go hungry and there are no buffalo to be found, let the keeper sing this mystery song and burn incense before my skull and that of my friend. Let him then fill my medicine-pipe, anoint it with buffalo fat, and lay it before me, and soon buffalo will come around the village and there will be meat.

" ' Again, if any one is sick, let the keeper get aromatic herbs [pennyroyal] and put them in water and set the mixture before the skull. And when the body of the sick man is rubbed with the sweet-smelling water he will get well. And now I want to die. Come, one of you, and cover my face with my robe.'

" One of the warriors stooped and drew up the robe of the aged medicine-man as he had bidden him, and in a moment the aged man was dead.

" The people then took his body and deposited it in the place of the dead on a platform raised on poles. After years had passed, and the bones were white, they took the skull and hung it up in an earth lodge beside that of his friend. A warrior was chosen to be their keeper, and at his death another was chosen, always of the same band. How many keepers of the skulls there have been since the Eagle-man died we do not know, but there have been very many.

" When I was about twelve years of age I was taken into one of the largest earth houses in our village, which I was told was very holy, and there I saw a very old man with gray hair. His name was Missouri River, and he was keeper of the medicines. When he died, my father, who was a member of the same band, was chosen to be keeper. My father's name was Small Ankle. My father kept the medicines a long time. He was seventy-

eight years of age when he died; that was eighteen years ago [now 1906].

"After my father's death my mother lived until five years ago. She cared for the medicine things and preserved them while she lived. Now I take care of them because I know my parents would want me to keep them. When I was young I made presents — offerings of cloths and other things. I am now Christian and do not care to pray to the old gods; but I want to keep these things out of respect to my parents.

"When my father was keeper of these medicines and I was about seventeen years of age many men brought good things — guns, muskets, blankets, and other gifts, and said to my father, 'We want to follow you and make you head-man; and you choose a good place for our winter village.'

"They also said: 'We want you to pray for us, that we may have plenty of buffalo and may get into no trouble. You keep on praying.'

"When the men had gone away, my father took down the two skulls and placed them on a cloth; he then took out the medicine-pipe, anointed it with buffalo-fat, laid it on top of the skulls, and sang a mystery song. When he sang he covered himself with the buffalo-robe that had covered the skulls. Thus he did all night. In the morning he sent me out to call the chiefs and head-men together. They all came, and he said to them, 'Yesterday you came and gave many things to my gods; so I prayed, and my gods answered me. I had a vision that in four days many buffalo would come. So I now tell you.'

"After two days some men shouted from the house-top, 'Buffalo come from the hills! The buffalo come toward the village!' This was Fort Berthold village, and the buffalo were in the hills about five miles away.

"After a few days my father was made chief. He led the entire village across the Missouri and made their winter village eight miles west of here. He prayed there for the people and they had plenty of food — cattle, buffalo, good gardens.[1]

[1] Probably meaning that they had abundant supplies from their gardens of the previous summer. — G. L. W.

"Enemies came to kill and steal horses, but our men chased and killed two. Our people had good times, and sang and dànced. I tell you this because I know. When spring came we went back to Fort Berthold village.

"That summer our gardens grew until the corn was about three feet tall, but there was no rain. So the people collected things, piled them up before the medicines, and asked my father to pray for rain. All the young men then went out of the lodge; only the old men and chiefs stayed, sitting, all of them, back near the door. My father sat near the medicines. He was to tell what the skulls promised.

"He prayed and sent me for aromatic weed [pennyroyal], and I went to a wet place in the timber to get it. He put this on the ground and on it laid the skulls. About noon, while the people sat there, I went out and made a fire outside and cooked dinner. But my father sat with the buffalo-robe — hairy-side out — over him, and sang and prayed for rain.

"At dinner all ate. Then some old men went out and came back, saying, 'Black clouds gather. We see them.'

"My father got up, took water and threw it over the skulls, and walked around them.

"In the afternoon clouds came over the village. At night rain fell. The clouds hung overhead until midnight. Then fell a gentle shower, then harder and harder the rain came until the afternoon of the next day. After the rain was over some men came in and thanked my father, and measured and found the earth wet so deep [the depth of a foot]. So they said, 'The fields will grow!'

"And again one night my father dreamed, 'We kill one enemy near here.' And I also dreamed that my right hand was all bloody as I approached the dead enemy.

"Ten days later a great war-party came against us. We went out against them, for I was old enough then to go to war. I had a good war-horse, and when we chased the enemy I got ahead. They turned and fired, but I was not hit: only the smoke reached me. But my horse was killed. My father then said to me, 'Your bloody right hand was the horse.'

"When white men came, the Government wanted to make us learn to work and live like them. My father said, 'Yes, I think white men tell true. They know.' After that my father did not believe so much in the old gods. When I was twenty-nine years of age my father put me in school — the day-school. I went four years, trying to learn white men's ways and to adopt their living. As you see I don't know all; but I tried to learn all. I want to keep on learning, as my Great Father knows. They write me letters, saying, 'Keep on.' I do all I can. I write and tell what my people want, and so agents came to dislike me. I will now say a few more words and end.

"First, I help the Government and tried to lead my people, and so I do all this. But my people turn against me because I do this.

"Now, of the medicine-skulls: When the village moved, the medicine-skulls were taken along and a new stand made. The pole with the medicine-bag always stood beside it.

"With the skulls rested the medicine-pipe. The skulls rested on the sweet-smelling weeds [pennyroyal]. On the lower platform of the stand is a buffalo's skull. . . . This buffalo-skull was given to my father by the old man when I was twelve years of age. The same old man gave my father the eagle's wing to remind him of the Eagle-men.

"The medicine-pipe has a nick in the bowl. Once the Hidatsa Eagle-man, when the enemy came against the village, took the medicine-pipe and sang the mystery song and held the pipe with the bowl pointing forward toward the enemy; and lightning came from his eyes and knocked a piece out of the bowl, making the nick. The enemy fled.

"Once nine hundred Sioux came against the village. My father was up on the roof of the earth lodge and thought that the enemy was prevailing. Every time the Hidatsa rushed out of the timber the Sioux would drive them back. But my father took the medicine-pipe and placed it on the roof and rolled it toward the enemy, singing the mystery song. Soon a heavy west wind came up in the face of the Sioux, so that the Hidatsa could shoot their arrows to better advantage. So the Sioux fled, losing four killed d four horses killed.

"The bright-colored calico offerings were put over the shrine about twenty years ago, when the village moved hither from Fort Berthold. But the two buffalo-calf skins are much older. The latter are prime robes: one is golden in color; in the fall- or autumn-kill very few buffalo-calf skins of golden color would be taken, and for this reason they were prized.

"I have now told the story of the medicine-skulls."

Explanation of the Buffalo-skull

"When the people starved and brought presents to the Eagle-man to bring buffalo, he would take down the buffalo-skull, place it before the shrine, take the medicine-pipe and anoint it, hold it in incense, sing a mystery song, and then lay the pipe before the nose of the buffalo-skull.

"For incense they burned a kind of pine. There are two kinds; one smells good, that is the one.[1]

"But the keeper of the skulls never took out the skulls from the shrine except to make rain.[2]

"The hat on the buffalo-skull was an offering by a young man to the spirit of the buffalo-skull. Some twenty years ago a number of young men came, and one of them made an offering of the hat. The eagle-feathers tied to the horns are also offerings, for in the old story the buffalo liked the spotted-eagle feathers."[3]

[1] This is Good Bird's explanation. I fancy he means cedar.—G. L. W.

[2] Wolf Chief here was not very explicit, though I do not think I erred in recording his words. He seems to mean that various medicine ceremonies were performed before the shrine on which the skulls were placed, but that ordinarily the skulls themselves were taken down only for use in divinations for rain when the skulls were to be sprinkled with water.—G. L. W.

[3] This curious remark may not be without significance. The Indians prize the feathers of young eagles, which are pure white, tipped with black. The spotted or mottled feathers are plucked from old eagles. The buffalo-skull is named "Oldest-whose-ears-hang-backward," and bears in name and significance the idea of great age. His spirit therefore prefers the spotted feathers of the old eagles. The same concept appears in the Mandan myth of the four Turtle gods. Nu-mank-ma'-hi-na, the Mandan creator, gave the tribe four turtles as gods. Of these one was very large (and doubtless also very old); the others were smaller. Wishing to honor the largest turtle, and not having enough white feathers for all four, the villagers gave mottled or spotted feathers to the three smaller ones, reserving the more valuable white feathers for the old turtle. Highly indignant because he was not given the

Explanation of the Turtle-shell

The turtle-shell that lies on the lower platform of the shrine is medicine, and accompanies the skulls. No one knows how long the skulls have passed down from keeper to keeper. When a keeper became too old to take care of the mysteries longer, he sold them (i. e. passed them to another who gave him rich gifts for the privilege), and thus the skulls were always guarded. The turtle-shell was with the skulls when Wolf Chief's father took them.

"Yesterday, as you remember," said Wolf Chief, "we were talking about these things and took down the skulls, and rain came. So the Eagle-man — he did not have to go on the roof nor indeed have to do anything except just to sprinkle water on the turtle-shell, and soon rain would come; so, too, when one became sick, a bowl was filled with water and placed before the shrine, and the same blue aromatic herbs [pennyroyal] placed over it to make the water sweet-smelling, and the water was rubbed on the sick man's body and given him to drink.

"The skulls and other objects of the shrine were the property of the Midipádi band of the Hidatsa tribe. That is, when a keeper grew old, he passed the shrine to one of his own band only — a younger man. The consent of the band was not necessary, but the recipient of the shrine was obliged to pay heavily for receiving it.

"In divination for rain, the keeper took certain purple flowered plants [pennyroyal], laid these down, and put the shell upon it. These plants grow in damp places. They bite the tongue when chewed. When the shell is placed on the plants, water is sprinkled over it to bring rain. 'I do this,' said the Eagle-man, 'to bring rain; but after I am dead, take my skull and put it on the ground instead of the shell, and sprinkle water on it.' The skull, like the shell, was to be put on the purple flowers."

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mottled feathers, the old turtle made off for the Missouri river, dragging after him the whole population of the village who were vainly trying to restrain him with ropes. In the Buffalo dance the Turtle gods were represented by drums. Although places were made for *four* drums only three were used, one place being left vacant in memory of the Turtle god who disappeared in the Missouri.—G. L. W.

Wolf Chief here reminded me that yesterday we took the skulls down and put them on the flowers, and rain came. And thus the old promise came true again, as so often it had thus proved powerful.

"Thus the turtle-shell was the original Eagle-man's medicine."[1]

EXPLANATION OF THE EAGLE-WING FAN

With the turtle-shell and the buffalo-skull, and lying on the same (lower) platform of the shrine, was an eagle's wing. This was a symbol of the origin of the two Eagle-men.

Wolf Chief remembers that when people came to have rain prayed for the fan was laid beside the exposed skulls and water sprinkled over all. His father then sang the mystery song proper for the occasion, standing the while before the skulls. Sometimes he blew a whistle made from the wing-bone of a bird (probably of an eagle). Such whistles are still used in Hidatsa dances.

When performing these mysteries his father sometimes wore a buffalo-robe (hair-side outward) over him. At other times he did not wear the robe but stood with his body painted in many places with red paint.

It is worthy of note that when asked to show the attitude assumed by his father in the rain mysteries, Wolf Chief stood with the eagle-wing fan in his right hand, held vertically on a level with his face as in an attitude of prayer. Wolf Chief faced the west — the quarter, as he explained, whence came the rain. Holding the fan aloft was an appeal to the thunderbirds.

THE MEDICINE–BAG AND ITS CONTENTS

THE MEDICINE-BAG.— The medicine-bag that hangs from the support at the left of the shrine is one of the buffalo parflèche variety and was made by Wolf Chief's mother. It contains various ceremonial articles. This bag, like the one in which the skulls are kept, is decorated in geometric designs, the colors in this one being blue, black, yellow, and red. Holes have been

[1] Whether this was the manhood initiatory medicine does not appear. Perhaps it is best to say that the turtle-shell was *a* "medicine" of the Eagle-man.

drilled in the edges of the parflèche at each end, and the ends are laced with strips of buffalo-hide, forming a thick fringe.

The uppermost object of the bundle is a black bear's skin. It has been carefully tanned, and lined with calico, the latter being sewed to the edges of the skin with sinew. The head was carefully skinned, the eye-openings and the ears being well preserved. The space in front of the ears is painted yellow, and there is a bunch of medicine just back of and midway between the ears; this is tied to the skin with a deerskin thong and contains eleven tubers of the wild turnip, five downy feathers, and a wing-feather of an eagle; the latter has a piece of red stroud-ing about the quill end, and this in turn is wrapped with white beads. The feather is tied to the skin with a strip of deerskin, as already mentioned; the other objects, including a two-strand fiber cord, are tied to it. A long strip of red strouding is fastened to the edge of the skin.

WOLF-SKIN.— The wolf-skin, which is the second object of the same bundle, has been tanned; the entire head, including the nose, is intact, as is also the tail. The legs and the belly portion have been cut away, leaving the pelt in a rather narrow form. It is painted white on the inner side, and there is a band of red paint[1] across the fur side about a foot from the tail.

Eight inches below the ears the skin is tied with a strip of buffalo-hide, and at this point a bundle of feathers is attached to the skin by means of a deerskin thong. In this bunch there are fourteen eagle tail-feathers and fifteen hawk tail-feathers. These feathers are attached to deerskin strips which are laid along the quill and lashed with sinew. One of the eagle-feathers has a wrapping of red strouding over the quill and a strip of deerskin on each side; some of the other feathers have double ends of deerskin, but this is the only one heightened by color.

SMALL COYOTE-SKIN. — The next object was part of a coyote-skin, which was wrapped in calico. The nose and part of the head were intact, but the remaining portion of the skin ranged from two to three inches in width and was two feet in length. It had a deerskin thong tied below one ear, at the edge of the

[1] Wolf Chief says this was painted on the skin "because of a dream."—G. L. W.

skin, and another on the same edge about eight inches from the farther end. It was used as a neckband, according to the myth. The skin was painted white and the nostrils red; aside from this there was no decoration.

CALICO BUNDLE. — A pair of bracelets, a human scalp, and a feather were the contents of a piece of calico that had been wrapped about them.

The bracelets are composed of brass beads and wolf-claws, strung on deerskin. One contained thirty beads and the other twenty-nine beads and six claws — five to six beads forming the intervals between the claws. To the bracelet last mentioned a narrow strip of coyote-skin is tied.

The scalp is that of an Indian. It has been stretched on a circular frame backed with red strouding bound to the frame with deerskin cord. An eagle tail-feather is attached to the hair near the central part of the frame, in the same manner as that noted in connection with the feathers on the wolf-skin. It has strouding next to the quill. A deerskin strip is tied to the upper part of the frame, by means of which the scalp may be attached to a belt, lance, or other object.

The single feather in the package with the other two objects described is a down-feather of an eagle. It is slightly colored in places with red paint, but is otherwise unornamented.

BEAR'S PAW, OR BEAR'S FOOT-BONE. — The bundle containing the bear's paw had also two down-feathers of the eagle which show no signs of use. The paw has been dried and the skin is painted a dark red. One of the toe bones had become detached, and is now bound to the adjoining one with a piece of sinew. On the under part of the paw there is a mass of eagle down-feathers and herbs; these are bound to the paw by a thick layer of two-strand fiber cord to one end of which two flint arrowheads and a bunch of eight hawk-feathers are tied. Over this cord there are three metal bracelets of native workmanship; two are of brass and the third is of iron. A strip of cotton cloth has been bound over the bracelets; to this two strands of trade beads have been tied. One string is on sinew and the other is on deerskin. (See plate XIII, *a*.)

Bundle Containing Buffalo-felt. — The buffalo-felt was wrapped in calico and in it was a lock of hair matted together with red material (Wolf Chief says, "bits of clay and fine gum"), such as may be seen in the long hair ornaments worn by Blackfeet, Crows, and other northern tribes at the present time. This, according to Wolf Chief, is a lock of his grandfather's hair. With the hair were three objects tied together with deerskin. Two are bear-claws and the third a bear's tooth. One of the claws is drilled for suspension ; the bone of the other

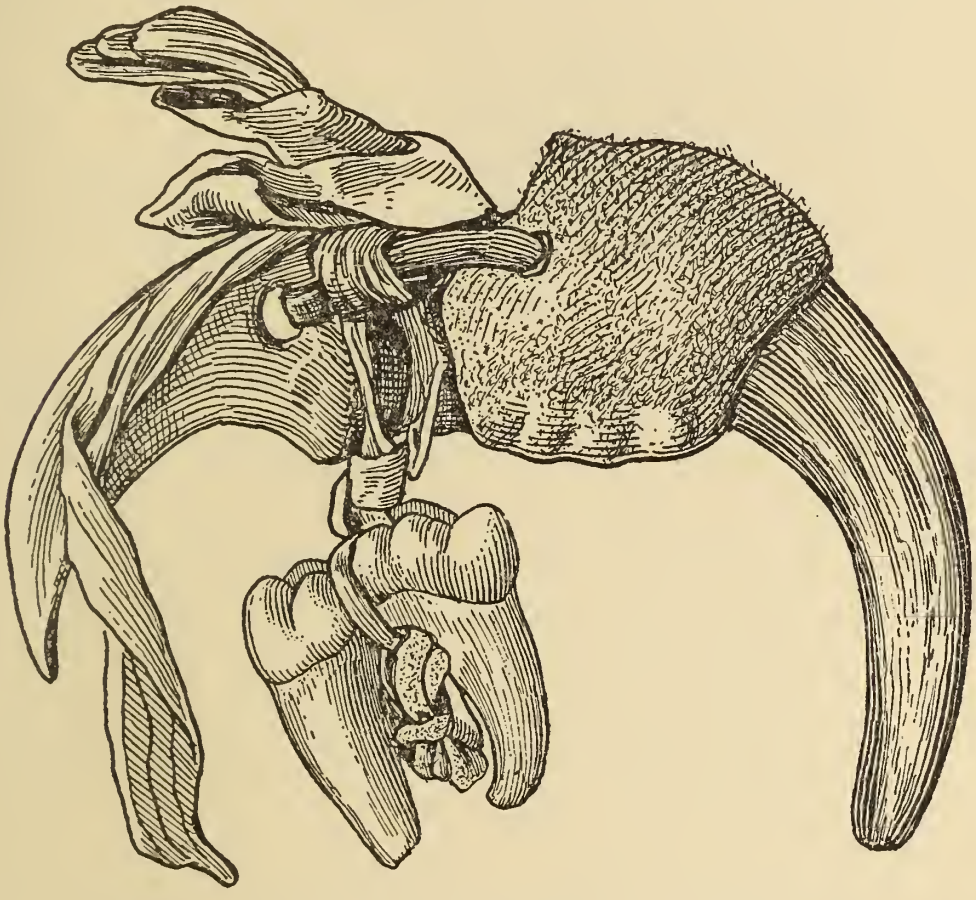

Fig. 8. — Bear-claws and bear-tooth from medicine-bag.

is covered with a piece of buffalo-skin, tightly sewn to keep it in place ; the cord passes through holes in the skin, thus obviating the necessity of drilling (fig. 8).

Pipe. — In the medicine-bundle, but not tied up with any of the packages, there was a stone pipe with a wooden stem. The pipe is of the type commonly found among the Plains tribes. The only decoration on the pipe is in the form of an acute angle

carved in the upper part, nearest the proximal end. This decoration is accentuated by the use of red paint. The wooden stem is round, but near the mouth end there is a shoulder similar to that noted in the pipe found in the shrine bundle. Aside from this shoulder the stem bears no decoration.

"BUFFALO STONES." — Wrapped in a black cloth were three stones. These are the "buffalo stones," the personal medicine described by Wolf Chief. The smallest one is a water-worn pebble; the other two, shown in the accompanying illustration (fig. 9), are fossil chambers of *Baculites*, a Cretaceous cephal-

FIG. 9. — "Buffalo stones."

apod, which crudely simulate the form of animals and might well have been used by any primitive people as fetishes.

MEDICINE-POLE. — The medicine-pole is a small cedar tree the branches of which have been removed in such a way as to leave projections on which ceremonial objects might be hung. It was from one of these that the medicine-bag was suspended. There are five strips of calico of different colors thrown over the top of the medicine-pole and allowed to fall over the medicine-bag. These were the only objects on the pole other than those already described.

EXPLANATION OF THE MEDICINE-BAG OBJECTS AS GIVEN BY WOLF CHIEF AND TRANSLATED BY GOOD BIRD

STORY OF THE BEAR-CLAWS MEDICINE

Wolf Chief then brought out, wrapped in a bit of buffalo-felt,[1] two bear's claws and a bear's tooth, tied with a thong (fig. 8).

[1] The felt is a bit of the hair which the buffalo shed in large masses or mats during the summer season.

There was also in the package a strand of Wolf Chief's father's hair, with bits of clay, and pine gum, or resin.[1]

"My father cut off the strand of hair from his head and wrapped it in the buffalo-felt with the bear's claws and tooth, so that the bear would guard and protect the strand of hair as representing my grandfather's body, from which it was taken.

"I will now tell the story of these things.

"When my father was about thirty years of age all the men of the five villages went to hunt buffalo. The young men on this hunt killed the bear whose claws we see. My father then thought he had a chance to 'find his god.' So he asked them to skin it with the paws and skull entire. He then took off his clothes. He then pierced the dead bear's nose with his knife and put a rope through the hole. He then had a man pierce the muscles of his back in two places; he thrust a stick between and fastened a rope to the stick so that my father might drag the bear's head and skin.

"All day until evening my father dragged the bear-skin in a lonely place. At evening he came toward camp. Something caught as if the bear-skin had been snagged on something. At the same time he heard a sound like a live bear, *Sh-sh-sh-sh!* He looked back and the bear-skin had stretched out its legs as it lay on the ground, as if it were alive. He then came back to the camp, and then the other men released him from the bear-skin.

"That night he dreamed the bear showed him how to cure sick people. He was to sing a mystery song, which the bear taught him, and to take the piece of buffalo-felt and hold it out toward the sick man, when the sick man would recover.

"'The bear told me how to do all this,' my father said, showing how it was done. When my father awoke he lost no time in getting the piece of felt.

"This was before I was born. After that when men were sick they sent for my father, who cured them, and he was paid many horses.

"My father told me to keep these, and I have kept them till to-day.

[1]These strands were added to the natural hair to make the latter longer.

"I am glad you are putting these things in a book — writing them down, for when men read them they will be interested.

"The bear-claws and tooth were from the original skin which my father dragged about. For this reason he put the strand of hair with it. My father's name was Small Ankle; he was Hidatsa."

Story of the Bear's Foot-bone and the Black Bear's Skin

The first object referred to consists of the bones or dried hind-foot of a bear, wrapped with the bark of a plant used often to make medicine snares, it was explained. The bark is twisted, treated somewhat like hemp. The upper part of the paw is well wrapped, and has two brass and two iron bracelets about it. Pendent are two strings: one of five blue beads, the other of eighteen beads alternately white and blue. Also tied to the paw with a small thong are two flint arrowheads. The bunch of downy feathers are bound with the string to the underside of the paw. (See plate XIII, *a*.)

"Now I will tell the story of the bear's foot-bone. Years ago a man went across Heart river to the hills on the northern side. The man went there to find his god; he went around and cried and wept, and cut his body and made much suffering because he wanted to see his god. He came to some trees and found the feathers — all fine and downy — hanging to the branches, dropped maybe by eagles, or because some eagles had died, he thought. He found nearby a lodge of poles and grass and bark, such as hunters used to make. He went in and found within several black bears.

"'Come in,' they said. Then they said to him, 'You see the feathers that lie on the ground and hang to the tree branches. We are here to catch eagles. As you see, the eagles fly high in the sky far above us, but we have snares to catch them. These eagles we eat, for they are our food. The snares are magic snares — we motion with the snares, casting them upward in the air, and catch the eagles.'

"The man stayed with the bears a good while, for he liked them and the way they lived. He, too, ate eagle's flesh, liking

it. The bears gave to him the feathers of the eagles they killed — the tail-feathers, which Indians prize. In the daytime the bears would go toward the high hills to the northwest, and every evening came home with the eagles they had caught.

"Now, the man stayed each day in the lodge, for there was a young bear there with whom he played, calling him 'younger brother.'

"One day the black bears said to the man, 'It is time now for you to go back to your home.' But the man answered, 'I don't want to be separated from my younger brother. I should like him to go home with me. I have there nice things to eat — corn and squash and other nice things, which I want him to eat.' 'All right,' answered the bears, 'but you must be careful; your younger brother is hasty and quick-tempered.'

"So those bears went away to the north while the man returned to the village, bringing his younger brother, the black bear, who followed him about but would not follow any other of the villagers.

"Now, the man had a wife before he went to the bears' lodge. His wife now cooked not only for him but for the bear, giving the same food to the man and to his younger brother. One day they had mush made of corn-meal. This was in the pot boiling, and the woman was stirring the pot when some of the mush boiled up and burned her on one of her fingers. The woman turned to see the bear watching her. 'You yellow nose, you looked at me, and see what you did! You made me burn my hand when I am doing all I can to cook for you!' she said, for she was angry.

"When her husband came home he found his younger brother sitting in the back part of the earth lodge very silent and still, as though he were grieving. 'What is the matter?' the man asked him. But the bear said nothing. 'Get a platter and give the bear something to eat,' the man said to his wife.

"This she did, but the bear would not eat. But neither the bear nor the woman told about the burned finger or what the woman said when she was angry.

"The man feared the bear would run away again to his home

in the hills. So he called four older men to watch his younger brother that night. So the four men brought much tobacco, and smoked and jested all night. If the bear went out, they went out, fearing the bear would run away; but he made no such attempt. At last morning came. Thus passed four nights, the four men watching each night. The four men were very strong men and were accustomed thus to watch of night, and knew how to do it.

"But the bear wished to escape, and just at dawn, after the fourth night, he caused the night to fall again over the land, so that everything was in darkness. The four men, knowing day ought soon to appear, watched the bear.

"The second time dawn appeared, but the black bear caused night to fall the second time, and a third and fourth time. The strong men, now utterly wearied, fell asleep. Then the bear ran out and escaped.

"Dawn came again, and the man arose and went to find his younger brother, but found instead the four men asleep and his younger brother gone. Then he knew his younger brother had gone to his home in the bears' country.

"The man went outdoors and pulled sage and made four bundles of it. One bundle he laid on the ground and stepped on it. He dropped another and stepped on it, and so the third and fourth, each time stepping forward. When he stepped on the fourth bundle he found himself beside a lodge far away in the north, in the bears' country. His younger brother had taught him to do this, so that in four steps he found himself far away beside a stretch of timber and the lodge nearby. When the man came to the lodge he remained outside and cried and cried. He could hear his younger brother within, laughing and telling stories and having a good time with his father and mother.

"The younger brother's (the black bear's) father came to the door and invited the man to come in, calling him his son [i. e. adopted him].

"The old bear then said to the man, 'I told you before that this, your younger brother, has a bad heart. I was sure some-

thing would happen to make him angry and that he would run away from you. Your wife was cooking some food and spoke to him impatiently because she burned her finger. So he got angry and ran away from you.'

"The young bear-brother had a sister, and one day he went out to play with her. The man stayed indoors with the old bear. The bear said to the man, 'I adopt you for my son and will now teach you how to hunt eagles. Now, go out and play with your brother. As you play, throw him down. Then with your fingers nudge and tickle him in the ribs and in the neck so that he will laugh. He will beg you to stop. Don't do so, but keep him laughing, and by and by he will lie back dead. When he is dead we will skin his body, taking out all flesh and bones. Leave the skin with us. You already know how to come to us, taking four sage bundles and stepping on them. Go home, and after one year we will come down to your village and meet you and make eagle-hunting medicine. When we start from here we will take your brother's skin. Although he is dead, his spirit will always be with the skin. So when we meet you and come to your village, after one year, we will bring the skin and you will pray to your younger brother and he will hear you.'

"Then as the man left, the bear said, 'You save all your buffalo-hides and food and things of value, — clothing, and other things, — and when we come you must give them to us.'

"The man promised, took four sage bundles, and in four steps reached home.

"When he reached the village he helped his people in many ways. When they were hungry he thought in his mind thus: 'There should be buffalo near the village,' and when he would thus think it, it was so.

"When enemies came against the village, and he went out and fought, he would chase them all away and kill many. When there was no rain, he called the rain, and heavy showers passed over the village. He said also to the people: 'I have met very sacred black bears. For that reason, therefore, if I think a thing it becomes true because they put the power [mys-

tery] in me. Bring to me gifts, anything you wish to give — pottery and any other good things; and valuables, robes and other things.' So the people brought gifts to him in great number.

"Then an animal — we do not know what — came at the end of a year with a message from the black bears, saying, 'Four nights hence you must put out all fires and get ready all your gifts. The black bears will come with many friends, making up quite a party, and these will divide the gifts among them.'

"On the fourth night a heavy fog fell. The man told the villagers — sending around old men to tell them — that they should all stay in their houses.

"Toward midnight the man got ready his pipe, piled his presents in a heap, and awaited the bears' coming. At midnight there was talking outdoors, and the man knew the bears had come.

"The bears sang a song, and when it ended there was a voice of someone telling what he had done in war to his enemies. The door then opened and the bears came in. All sat around, filling the earth lodge. One of the bears then said to his servant: 'Make a fire,' for First Man Maker was with them and sat at the left-hand post nearest the door (going in), for that was a place of little honor. He then got up and built a fire. The Hidatsa name of First Maker is Itsikawáhidish.

When the fire lighted the lodge the man saw that it was full of black bears and also some snakes — for these were the bears' friends — they of whom warning had been given the man in the message. But most wonderful of all, in the rear, behind the fire and in the place of honor, was something that looked like a bear — it was the black bear's (the younger brother's) skin standing up as if alive, for it had been stuffed so as to make it look as if alive; and near by it lay a buffalo-skull. Then the old father black bear said to the man: 'My son, we are now all come. And we want you to give us anything we ask, for we expect many presents. But I, too, have a present for you. Send all your men out to-morrow into the plain nearby and you will find a great herd of buffalo, filling the plain. This is our

present we have brought to you. You will kill the herd and have much meat.

" ' My son, at daylight we will go back home — we bears and our friends. But after ten nights ten Sioux Indians will come to fight you, and you will go out and kill them all. This is our second present to you.'

" Then he said to Itsikawáhidish : ' Keep the fire burning, so that the room will be light.' Then he said to the man : ' My son, come and sit beside me.' The man went and sat as bidden

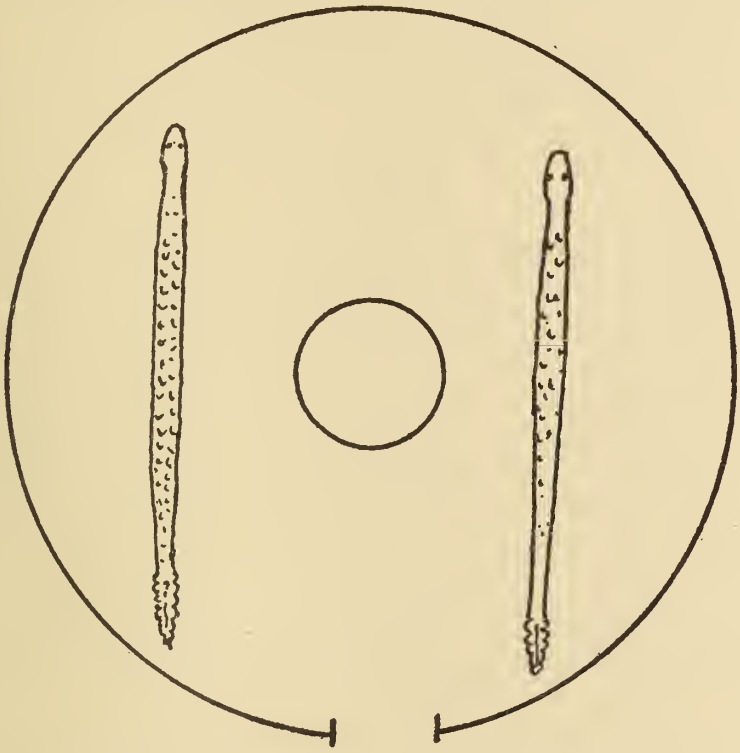

FIG. 10. — Position of snakes on the floor of the small tent made by First Man Maker.

" ' Come,' the bear then said to Itsikawáhidish, ' make a little tent beside the stuffed skin of the dead bear, my son.'

" First Man Maker took up sticks and made a small tent, as tall as a man's knee. Then the bear said to the man : ' My son, I give you a third present, this tent.'

" He then turned again to Itsikawáhidish : ' Come and put two pillows within the little tent,' he said. Itsikawáhidish arose and took two snakes and put them thus in the tent [fig. 10].

" The bear then said again to Itsikawáhidish : " Put this snare on the tent.' So First Man Maker arose and took a snare from

the medicines, which the bear had spread out before his feet. The snare was painted red, and had fine feathers (downy feathers) tied to it in a tuft. He put this snare on the tent, hanging it to one of the tent-poles.

"The bear then arose and said to the man again: 'My son, behold this snare also. It belongs not to me, but to my friend, the sun. And I present it to you' (and he hung a short snare, painted red, to another of the tent-poles). Then he arose again, saying, 'I also present you with another snare. It, too, is not mine, but belongs to my friend the moon. This snare is a good one and never misses.' And he hung another short snare, painted red, to one of the poles of the tent.

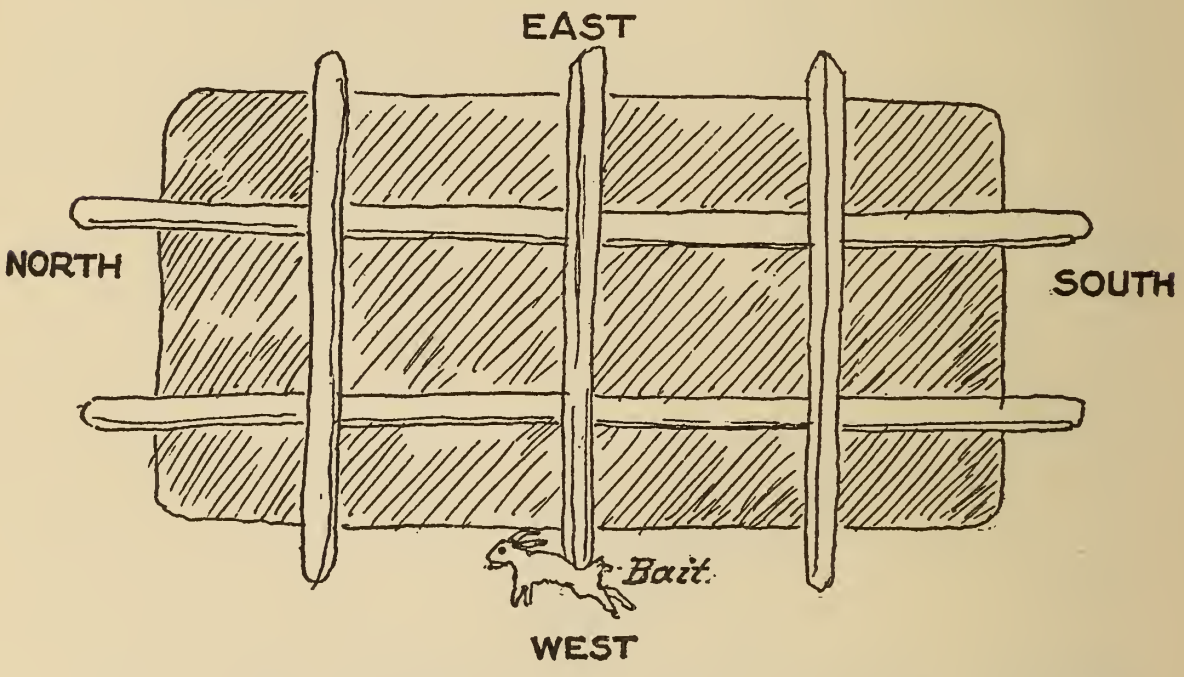

FIG. 11. — Plan of eagle-hunter's pit as drawn by Wolf Chief. The shaded portion represents the pit. Above it is the framework of poles over which bushes and grass are laid.

"The old bear then arose again, and said, 'I now wish to prove to you that I give you these snares with which to catch eagles. I will now show you the hole.' And he marked on the ground thus — [fig. 11].

"'The hole or pit shall be so deep [about 3½ feet]. Two poles shall run lengthwise, with other poles lying across. Over these bushes shall be laid, to look like a floor. Over these dry

grass shall be scattered. The pit shall lie with the four sides to the east, west, north, and south. On the west side shall be placed bait — a dead rabbit or other animal. The hunter shall lie within the pit to seize the eagle coming after the bait — for the eagles always come from the west. You shall go to hunt eagles in the fall when the young [that is, eagles of the summer's hatching, with white or ringed tails] shall be coming from the west.' Then he said to the man: 'We asked you to gather many things as presents for us. I now wish to see whether you have kept your word and gathered as many as I wished. You must give us as many things as heaped together shall cover over this tent [i. e. for the tent, the man was to pay in presents covering it], and each of these snares also requires a gift; for the snake pillows also you must make gifts.'

"The man then made the necessary presents. The bear then said: 'You must also pay us for telling you how to make the pit to catch the eagles — each pole requires a present; also you must pay for the pit and for the bushes covering it, and the grass and the bait and everything. You must pay richly.

"'You must make a sweat-lodge. I shall now show you how it is made. [He shows him the use of a sweat-lodge.] You must take sticks, bend them over, and cover them, with a hole within for the hot stones, and grass within to lie upon. For every part — the sticks, the hole, and the grass — you must make us rich presents; also for the stones and all.

"'I shall now tell you what this is for. When you have ended the eagle hunt in the fall and have killed enough eagles, you will build a sweat-lodge, purify yourself, and sing this mystery song, which I now teach you. Then the spirits of the dead eagles will fly away and you will come to no harm by their death.

"'Lastly, here is your younger brother. You must make rich presents to him.' And the bear pointed to the man's younger [bear] brother — the stuffed skin. 'I have not enough presents left,' answered the man. 'But I will give him my wife, for she is all that I have left.' For after he gave to the stuffed skin all the presents he had left, still there was not enough.

"Then the bear taught the man mystery songs, for with all these things — the tent and snares and pillow, snakes and pit and sweat-lodge — there go songs.

"Then the bear said: 'My son, you have not enough presents. You have not given as many as we expected.' The man arose and went out among the villagers and urged them to bring more gifts. Dresses of mountain-sheep skins, and buffalo-robes and other rich presents were brought in and given to the bears. Then the bear said to the man: 'My son, if the eagles wound you with their talons when you seize them, I shall tell you how to cure the wounds.' Then he gave the man the 'black medicine' (a plant, growing in the woods, whose root is sweet and is chewed; it grows two feet tall, with white flowers, and fruit like a cherry; this the Hidatsa call 'black-root medicine'). 'If the eagles wound you on your hands, chew the root and lay it on the wound. If they are angry or vicious when caught, chew this medicine and blow upon them, and they will at once be subdued.'

"The bear also taught the man all mystery songs. (There were many of these, one for everything the bears had given the man, one for the sun, one for the moon, and one for everything given — the sweat-lodge, the sticks, the grass, and all other things.)

"Then he said further: 'Here is this buffalo-skull. It, too, I give to you. The skull hears all over the world. His name is 'Oldest-grows-his-ears-backward.' This skull you are to put in the tent in the rear, in the honor place. When you go hunting eagles and kill any, you are to bring in the tail-feathers and lay them in the tent before the buffalo-skull, and say: 'Here are eagle-feathers. They are yours. Keep them for me.' [1]

"'I shall now give you, my son, another mystery song — the

[1] It should be remembered that the Missouri river flows through North Dakota from a north-and-westerly direction. The Indians say that in the fall the eagles migrated down the river, flying from point to point along the stream. The bait is placed on the west, the side from which the eagles were expected. The hills about the mouth of Beaver creek are covered with remains of these old eagle hunter's pits. The Indians say a live eagle was often tied near the bait to call his mates with his cry. — G. L. W.

greatest of all I have given. When you see an eagle flying high in the sky as you lie in the pit, take the snare I have given you — the first I presented to you — and motion with it, casting it up in the air, drawing it back, at the same time singing this mystery song, and the eagle will fly down soon and seize your bait. So, too, the two mystery songs of the sun and the moon. If you sing them at night in your eagle-hunting lodge, or if while you lie in your pit no eagles are in sight, sing one or both of these songs, casting the snares that go with them ; soon eagles will appear.

"'All these things you know ; I have taught you all, and you now have the eagle-hunting knowledge — all that is necessary to hunt eagles. All these things you must do.

"'If you take an eagle-hunting party out to hunt eagles, but no eagles have come, and they need luck, build a tent like that I have shown you, place in it two sticks to represent the two snakes ; place within also a buffalo-skull. Let the party pray to these medicines, and they will have luck. For the first tent we have made for you, it we give you and leave in your hands. But afterward, if you want to perform the same mysteries, you may build a new tent in your eagle-hunting lodge, or may even make one and sell it to others and teach them the same mysteries, and it shall have for them the same power.

"'Son, sometimes Itsikawáhidish will come to your hunting lodge and will give you luck by his visits, for he is powerful and knows all things in the world. He is my friend. When he comes, treat him kindly, for he will help you. He, too, has a magic snare.

"'Also hunt eagles only when they are flying from the west, and be sure not to hunt them in the spring when they fly from the east and south, for that season they have in their bodies that which will harm you and bring you misfortune.

"'I have now taught you all these things. But now I see daylight is nigh. I want to talk to you some more, but as day is here I must put it off until another night.

"'This pit I have described ; in it must you catch eagles. But if any other god or some other man puts other medicine in

the pit, it will be of no use to you to catch eagles. You will then do thus:

"'Sing this mystery song I now teach you, take a bunch of sage like that I now give you, and, as you sing, brush the dust and earth from the four corners of the pit and thus cast out the evil medicine. The pit will then be as before.'

"The bear ceased. The man then brought in the food he had saved all the year. All the snakes and bears feasted. Dawn approached, and all the bears and snakes arose and left the lodge.[1]

This is the story of the first eagle hunting, when men first learned such hunting. Before this (as Wolf Chief believes the tale teaches) eagle hunting from pits was unknown. Other birds were hunted with snares or spring traps. An ash stick or a sapling was bent over with a snare on it and bait placed within. The bird, a hawk for example, stepped on the trigger, which released the spring. The feathers thus taken were used for arrows. But eagles were not yet captured as here taught.

A man who knew the mysteries herein related could sell them to another; but they commanded such a high price in presents that few could afford it. However, if a man knew the mysteries his friends could make up a party and accompany him, and thus share his fortune.

Wolf Chief obtained the bear's paw, or the bear's foot-bone, with a black bear-skin, from his grandfather. The latter taught him the tale and the mysteries, and after the grandparent's death Wolf Chief gave rich presents for learning them. The grandfather, however, did not constitute Wolf Chief's sole teacher. All who knew these mysteries made up a band, or society, and one initiated into their circle made rich presents which were divided among the members.

Just how Wolf Chief's grandfather obtained possession of the bear's foot-bone and the bear-skin is not plain. Whether he provided himself with them after learning the mysteries as directed in a dream, or whether he purchased them from his teachers as

[1] Wolf Chief says there are about forty mystery songs that go with this mystery tale, many of which he knows. — G. L. W.

symbols of the original bear-skin of the man's younger brother (then the stuffed bear), Wolf Chief seems unable to say. However, the story as related above is the tale of which the black-bear's skin and the foot-bone are the symbols.[1]

Wolf Chief's grandfather was Big Cloud. When Wolf Chief was a child his grandfather would sometimes tie the bear's foot-bone around the little boy's neck at night to make him grow strong.

"My grandfather, Big Cloud," continued Wolf Chief, "after the year of smallpox,[2] when very few people were left in the village, went hunting, with the rest of the villagers, near where is now Miles City, Montana. They camped near a high rocky bluff on the Yellowstone. My grandfather ascended the bluff, carrying his medicines, and walked about on its summit, crying out and praying. Three nights and days he remained thus on the hill. On the fourth day a gentle rain fell, with little wind. As the rain fell on the top of the bluff, my grandfather went part-way down the bluff and sought shelter under a rock. But though it still rained, something hot came near his face. He thought at first it was the air, but it came closer — very hot. He looked behind and saw a great bird near him. He could not see the bird's head, for the bird seemed to be looking away across the river, with his head turned behind it. It had a great wing, but my grandfather could not see plainly. The bird was as big as a bull-boat, and was a sort of blue-green in color. The bird was flying, and as it passed, my grandfather saw that its tail was forked.

"After the bird had gone and evening had come, my grandfather went back to the camp. That night he dreamed. In his dream he saw a bird the size of an eagle. The bird gave him a song. Every time the bird stopped singing in order to breathe (that is, as the bird sang and stopped now and then to take breath), water poured out of its mouth.

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[1] I made no mention, at the beginning of the tale, of the bear's skin because only the foot-bone was shown to me. The significance of the other was not then pointed out. — G. L. W.

[2] Presumably 1838. — G. L.

" After seven days a large party of Sioux came to fight this little camp. So there was a battle. But my grandfather was a brave man, and his dream nerved him. Moreover, he had the new mystery song the bird had taught him. So they killed one Sioux, shooting him with arrows. My grandfather was the first to count coup. Then they killed four more Sioux, but not an Hidatsa was hurt.

" My grandfather said : ' It is because I dreamed about the bird and the bird taught me the mystery song — that is why none of us has been wounded.'

" Another great thing my grandfather, Big Cloud, did, and this I saw myself. Once we had no rain. Our gardens and corn-fields and crops were all dry and suffering for rain. The villagers gathered and brought presents to my grandfather and asked him to make rain come. So my grandfather put the black-bear's foot-bone and the snares on the ground, and tied the black bear-skin about him like a blanket ; he had also a whistle. My grandfather sent me to the river for a bucket of water, and bade me sprinkle the water over the medicines and on the floor. He walked around the medicines on his toes, in a crouching position, blowing his whistle. My grandfather began thus about noon ; about sunset a heavy cloud appeared in the west. The song my grandfather sang the meanwhile was not the one he had received from the bird, but another one.

" It rained all that evening, all night, and till nearly noon the next day. The ground was moistened deep, and pools stood on the low ground.

" Then my grandfather said : ' I shall now take the presents the villagers have brought.' If he had not brought rain he would not have taken the presents.

" The next year my grandfather became ill. I knew what he always did when he got rain to come. He told me I could practise the mysteries myself, but I did not try to do so.

" That is the story of the bear's foot-bone."

Story of the Wolf-skin

" There was a young man whose father still lived. At about fifteen or sixteen years of age, when he was expected to go out

and find his god (or medicine), the young man went out among the hills, calling and crying, and so kept on for three years.[1] One day he was up on the top of a hill and heard a noise as if many people were running a race, or antelope were running past him. He listened, and the noise ceased; but a voice spoke: 'I was sent ahead by a war-party to spy out the enemy. I saw a tipi of the enemy and called my friends, and when we charged the tipi, I was first, and counted coup on an enemy.'

"Then others spoke, one after another, each relating what deeds he had performed against the enemy. But as each voice ceased, as of men boasting of their valor in a council-house another voice would call out to the listening young man, 'My son, as you have heard, go thou and do like deeds thyself!'

"Then there were sounds of dances and beating as of a drum, and whistling as of dance whistles. As the dancing ceased, a voice would boast of brave deeds and the dancing would begin again. Then as before the admonishing voice would call out, bidding the young man to do likewise and promising him success.

"At last all the noise ceased. The young man now knew all the songs he had heard in the Ghost dance, for he had heard the dance of the ghosts of the wolves. Thus originated the Wolf Dance band or fraternity.

"For when all the voices had ceased, the young man went back to the village again and went to rest. In the night he dreamed that the wolves came and taught him the mysteries of the Wolf dance. They said to him: 'Get together many rich presents.' His father, fortunately, was rich, and he went among the other villagers and collected also from them many presents. (We do not know how long ago this happened — thousands of years ago.)

"'Now,' said the young man, 'the wolves will come shortly and bring my medicine.' (The lad already had a reputation for knowing.) Soon afterward two wolves came to his lodge, and

[1] It may be presumed that the first three years here mentioned were unsuccessful and that he "found his god" the fourth year. Four is the Hidatsa sacred number. — G. L. W.

said to him: 'Clean your lodge and get ready. After two nights we will come again and bring your medicine.'

"The second night was very still and quiet. The young man sat in the house waiting. He heard the sound of many people; outside the door opened and many wolves entered, with some men among them. One of these men was Itsikawáhidish. So all the wolves and the men and Itsikawáhidish came in and sat around the lodge, on the ground. Soon they began to sing — that is, a few of the wolves withdrew to one part of the room and sang a song while they beat time with a stick upon a buffalo-hide for a drum. Itsikawáhidish took his place beside the left-hand post as one enters the lodge.[1] Then a wolf arose and began to dance. When through dancing and before he sat down, he said: 'I was out with a war-party and was sent ahead to spy out the enemy. I saw a tipi and warned my friends. We charged the tipi and an enemy was killed, and I was the first to count coup on the body.[2]

"'And so I had four honors,' continued the wolf, 'one for being leader of the party, one for spying out the tipi, one for shooting the enemy, and one for counting coup on the body. Now, my son, go and do likewise, for we tell you these things that you may have power to do them.'

"As he named the four honors, the young man brought him four gifts — robe, arrow, knife, bow, or other things — things which his father had collected from his tribe by making feasts and telling the object thereof.

"After the first wolf had finished, one by one others arose

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[1] Itsikawáhidish (or Itsikamáhidish), the creator, does not always appear in the most dignified light in Hidatsa mythology. It is doubtful however whether any indignity is intended by making him servant to the bears. A war-party commonly chose one of their number, usually a young and active lad, to be their "worker," or servant. His duties included fetching drinking water for the party, and as this often compelled him to go for a water supply at night it required at times considerable courage. A young man in relating his first honors boasted how many times he had been a worker, or had "carried the bucket." That Itsikawáhidish was servant to the bears is hardly an indignity to him, but is a tribute to the dignity of the bears themselves. — G. L. W.

[2] In the medicine-bag beside the white wolf-skin is a coyote-skin. This is for Itsikawáhidish, for often he took the form of a prairie-wolf, but when he chose he became a man. In the Black Bear story Itsikawáhidish was in the form of a man.

and imitated him. But they did not have as many honors to relate — some had three, some two, and some only one. But for each honor the young man brought forward one present from the heap which he had in the lodge, and after telling of honors by one of the wolves, he would say: 'My son, we tell you these things that you may have power to do likewise.' Then one of the singers arose, and said: 'We have all danced and spoken — all we members of the Wolf band. But let us also ask Young Wolf to dance' (for so called they Itsikawáhidish, who was with them). So Itsikawáhidish arose and danced. He was dressed as for war. He had his robe tied around his body, like a belt. His leggings were gartered just below the knee, as if he were prepared to run a race or after the enemy. He was painted thus: His forehead and the fore-part of his scalp (the hair on the fore and top of his head) were painted with white clay; the front and lower parts of his leggings were also painted white. In his right hand he had a wand, or dancing stick, which he flourished as he danced. When the song ceased Itsikawáhidish stopped dancing, and, pointing to the wolves, said: 'I was with a war-party and was sent forward to spy out the enemy and saw their tipi, and when we charged I first counted coup on the body of the dead enemy, and I took many horses. All this I did because the old wolf (for it was to him he pointed) took me with the war-party. All this, my son, was hard for me to do. But we give you power, nevertheless, to do likewise.'

"When all had thus danced and received presents, an old wolf arose, and said: 'My son, we have now all danced, and we now wish to teach you again the mystery songs that we have been singing, so that you may hold them in your memory.'

"So one by one they taught him all their songs, calling him 'son.' Their most sacred songs they thus gave him. Then they said to him: 'All these songs which we give you and the medicines we are now about to give you — all these will give you power against your enemies, and make you powerful in war. These are the medicines' — and they showed him a wolf-hide painted with white clay on the fur. 'This skin is of our

own body; but it is not all. We give also a coyote-skin, for Itsikawáhidish has danced and promised you power, and this skin is for him. If your son or someone else wishes to call you father and learn these medicines and mysteries, you now know all these mysteries and can teach them, and they will make you rich presents; for we wish the Wolf band to last as long as the world exists.' "

So in memory of this story and of the mysteries herein given, the Wolf-medicine dance was held by the Hidatsa yearly, but always in summer, not in winter. The way it was held was thus: When a young man wanted "to keep his father's medicines," he fasted, neither eating nor drinking during four days and nights, nor on the fifth day also, all the time praying and calling on the wolf spirits. Every night they held a dance, telling the wolf stories and mysteries. Any one could enter the lodge and listen, sitting near the door;[1] but the members o the Wolf band sat farther back, in the more honored part of the lodge. The father of the young man wishing to be initiated could give his own medicines — the wolf and coyote skins — or if he wished to keep these himself, the skins of another wolf and coyote were given to the novice. The young men who were thus initiated — upon whom the medicines were thus conferred — paid therefor richly (a horse, more than a hundred hides, besides a feast).

The Wolf dance is a dance to give power against the enemy. The first wolves gave a scalp to the young man (represented in the dance by an imitation made of buffalo-hide) to be held in the dance. When Wolf Chief obtained wolf medicines from his father he received the scalp[2] with them. When one who owned these medicines went on a war expedition he would lay the skins and scalp down and pray to them. Often he took the two skins and the scalp along with him on the war-trail, and when the party came to camp they untied the bundle, took the medicines out, and prayed for help to kill many enemies and capture many horses. The leader, in going to battle, often wore the white wolf-skin thrown over one shoulder and brought head and tail

[1] The place of least honor.

[2] That is, the scalp found in the medicine-bag.

together under the opposite arm, or else a slit was cut in the wolf-skin in the neck and the man's head thrust through, the tail hanging down the man's back.

As the medicines were very powerful the prayers would come true, but sometimes a man led out a war-party and took with him the medicines and prayed to them, but lost a man or two — was not successful — having killed no Sioux or taken any horses.

If such happened the man would go out on the hills and cry to his medicines and beg them to help him. Then he would return to the old men who handled the Wolf-dance medicines and give to them his wolf medicines — the two skins and the scalp — and they would place his medicines before them and pray for him. For this he would make them a feast and give them presents, but not on such an elaborate scale as before: only a moderate number of presents were now given by him. When, however, he went to war again he would find his medicines all right and be successful once more.

The little pipe with the black bowl always goes with the wolf medicines. The pipe was carried by the leader of the party. On reaching the enemy's country he would light the pipe and smoke it himself, then turn the stem from him and offer it to his gods.

As has been said, the leader carried his wolf-skin medicines with him. He would spread the white wolf-skin on the ground, offer the stem of the pipe to it, pointing it downward to the wolf-skin, then offer it to the live wolves, sweeping it around the horizon and praying at the same time to the wolf-spirits — the spirits of the wolf-skin medicines and the other gods — for success in their undertakings, in killing enemies or in capturing horses.

Explanation of the Coyote-skin

The coyote-skin represents Itsikawáhidish, the creator. It was worn by the leader as a necklace when on a war or horse-stealing expedition.[1]

[1] Although questioned, Wolf Chief does not make it clear whether the wearing of the coyote-skin was confined to the leader of the war-party or was worn by anyone who "kept his father's medicines." I conjecture the latter. — G. L. W.

Wolf Chief volunteered the following brief account of this interesting personage:

"As I told you last night, the Hidatsa first met the Mandan at the mouth of Heart river. We do not know how long they stayed there — we think many years. Then they came up the river some twenty miles. The third time they removed about fifteen miles still farther. The last place was at the mouth of Knife river. They wanted to find a good place here at Knife river, and wanted to measure the new site. They called, we think, Itsikawáhidish. He came to the top of the hill north of Knife river. There on the top of the hill was a white stone. He put his left foot on the stone, and, turning slowly, pointed out with his finger the bounds to be occupied by the new village."

The people watched, and saw that the man had ears like an animal, and a tail, and when he left the stone had a footprint on it. The circle pointed out was a mile and a half in diameter. Wolf Chief, however, avers that it was years and years and years ago that the Hidatsa first built on Knife river. The old sites now found there belong to another and later migration. The stone with the footprint may still be seen.

The site thus pointed out by Itsikawáhidish was too large for the tribe, but he said, "I will call this tribe Hidatsa, or Red Willow people, because willows grow quickly and thick, and fill up the marshes; thus this people will grow and increase." This all became true. Children were born, and the people were numbered by thousands until the smallpox came and destroyed the greater part of the tribe.

Story of the Buffalo Stones

"My grandfather went into the hills to find his god. He mutilated himself, cutting his flesh. About noon a grasshopper came near his face. He was lying on a pillow that he had made of sage-brush. 'O my god!' cried my grandfather (meaning 'here is my god'), and put the grasshopper under the sage-brush pillow. In the evening he looked under the pillow and saw that the grasshopper had become the largest of these three stones.

"He took the stone home and wrapped it in his medicine-bag. Opening the bag after the lapse of about three years he found a second and smaller stone born to it. After two or three years more a still smaller stone was born to the second stone.

"My grandfather prayed to the first, or 'father,' stone, and became a great warrior and a great man. One night he dreamed the buffalo stone said: 'You must not eat any buffalo entrails.' But my grandfather wanted to know why he should not eat buffalo entrails. One day when some entrails were boiled in a pot, he took his knife and cut off a piece to eat it. At once the buffalo entrail appeared full of blood. 'Ah, I see why I should not eat buffalo guts,' said my grandfather.

"This is the reason the stone is called 'buffalo stone.' The story is that a long time ago a man dreamed that the large yellow grasshopper, which hops, the kind which my grandfather saw, these become buffalo, and so we call them buffalo grasshoppers. These grasshoppers have no wings, and are yellow. They are common about here."

ADDITIONAL DATA

In Wolf Chief's story of the Two Medicine-skulls it will be noticed (page 293) that he says the two skulls belonged to the Awatiha-itaka, or Old Band. This he told me in 1906 when I first met him and learned the myth. It was not until the next summer that I obtained the shrine. Wolf Chief then told me (page 299) that the shrine was the property of the Midipádi band. How this apparent contradiction is to be explained is not yet made certain.[1]

In the summer of 1908 I was commissioned to visit the Hidatsa by the American Museum of Natural History. I then endeavored to obtain some account of the Hidatsa bands and learn the meaning of the names Awatiha and Midipadi.

[1] According to Edward S. Curtis (*The American Indian*, vol. IV, 1908—in press), the Awatiha (Amatihá) formed one of the original four Knife River villages. They, like the Amahámi, became practically extinct in 1837 on account of the great smallpox epidemic, and the few survivors became fused with the Hidatsa proper. It was thus that the skulls came into possession of the Midipati.—*Editor.*

In 1906 Wolf Chief had translated *Awatiha-itaka* as 'Old Band.' He now explained that *Awatiha* is an old-dialect word meaning, he thought, 'Few Lodges,' but he was not certain; *itaka* means 'old.' *Midipádi*, also an old dialect word, is from *midi*, 'water,' and *padi*, which he conjectured meant 'close-to.'

Wolf Chief then gave me an incomplete table of the Hidatsa bands. In this are two divisions named the Three Bands and the Four Bands, made up, as the names imply, of three and four bands respectively. Wolf Chief classes the Awatiha and the Midipadi as members of the Four Bands. In a map of the "five old-time villages at the mouth of Knife river" which Wolf Chief drew after information obtained from his father, two of the villages are marked *Midipadi-ta-awati* (Midipadi-village) and *Awatiha-ta-awati*.

A more detailed and apparently older account of the origin and organization of the Hidatsa bands was obtained from Good Road.

The hero Oökesh thought to divide the tribe into bands, naming each after some war experience in his own life. The Midipadi were so named "because when I go to war in autumn when the air is cold and I grow thirsty, I make a hole in the ice with my knife and the water comes up. Therefore I will name this band Midipadi, or Water-coming-up."

In like manner Awatiha means 'scattered-camps,' because when Oökesh was out on a war expedition he left "camps scattered along the way." *Awati* or *amati* means, properly, "earth lodge"; but a war lodge was made of poles with earth heaped about the sides.

In Good Road's table the Awatiha are put in a band by themselves; but the Midipadi are placed where Wolf Chief puts them, in the Four Bands.

Nor is the question made less perplexing by the brief account obtained in the same summer (1908) from Black Hawk. Asked about the two skulls purchased from Wolf Chief, Black Hawk said:

"The one who owned the skulls is the proper one to ask. But I have heard that they were the skulls of two eagles.

There were two of these. The one who stayed among the Hidatsa called himself Midipadi. One of the bands, named Midipadi, always kept the skulls, and when war came they took them out upon the house and stood against [*sic*] the wind. They laid the skulls on the lodge and then it was easy to run after their enemies. One of the skulls belonged to the one who went to a different tribe, the I-ta-i-śa-pú-za,[1] who live this side of the Crow Indians and near them. The name of this one was Śi-wa-ĥú-wa. This name is an old-dialect word and its meaning I do not know.

"Small Ankle, Wolf Chief's father, was a Midipadi.

"The man named Śiwaĥúwa said: 'I am free and have plenty to eat, and I will get my friend by killing him.' So he came down where the Hidatsa man stayed, near the Missouri river. But the other said, 'No, I have a better place than you, so I shall keep you.' Then the Hidatsa wanted the other to smoke with him and to eat, and he gave him some corn and tobacco. The other liked the corn: it was mixed up, four kinds. He changed his mind therefore and was willing to stay with the Hidatsa. So he said to the Hidatsa, 'I will come, but you must not make me suffer too hard.' So he came with some young men to fight. But the Hidatsa went out with his pipe, and killed all the young men, and then the two sat down to smoke, and when they got through smoking, the other, Śiwaĥúwa, died. Then the Hidatsa, as he had promised his friend, took his knife and cut off the other's head to keep forever. Since that day they have kept the skull.

"Some of the old people have told me that Midipadi, before he died, said that his skull should be with his friend's, always, kept by the Midipadi band. The Eagle-man called himself Midipadi because he joined that band. That is, the band was not named after him; he was named after the band.

"It is Indian custom that only members of a band can tell the traditions that belong to that band. Thus, only members of the Midipadi band can tell the story of the two skulls."

[1] The Cheyenne. — *Editor.*

The foregoing is submitted without further comment. What relations, if any, the Awatiha and Midipadi had to one another is not known. It is noticeable that the names Midipadi and Śiwaḥúwa here applied to the two Eagle-men do not possess the ušual personal suffix *ś* (*sh*). This is rarely omitted in a person's name, but does not occur in names of tribes and bands.

THE ETHNO-BOTANY OF THE GOSIUTE INDIANS OF UTAH

BY

RALPH V. CHAMBERLIN

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The Gosiute Environment

THE home of the Gosiute Indians was formerly all of the generally desert territory bordering Great Salt Lake on the south and extending westward into eastern Nevada. To the passing traveler this whole region, before certain limited portions were reclaimed by irrigation, appeared so utterly desolate and uninviting that he must have wondered that any human being should be found there excepting from direst necessity. Yet the Gosiute still clings to it as his home and native land, loving it with a love as ardent as ever burned in the breast of patriot. Away from it he saddens and pines; and no thought to him is so harrowing, no fear so unrelenting, as that the white man's government, for the white man's greed, may yet force his remnant people away to some hated reservation. To be sure, he now holds in his own right but a few restricted areas; yet he is still free to roam much as he will the entire region made sacred to him by the camps and graves of his forefathers. In the truer, deeper sense still his are its gray desert stretches, its rugged mountains and steep-walled cañons, its scattered springs, hidden seeps, and slender streams, about which cluster a host of legends and traditions he treasures from the past and teaches to his children's children; its animals and plants, the haunts and habits and uses of which it has been his love and much of his practical education to know; its clear, invigorating air, and its rich, lingering twilights with their indescribable mystery and charm.

The region as a whole is broken by a series of mountain ranges running in a generally north-and-south direction and rising for the greater part from a thousand to six thousand feet above the general plateau. Between the ranges are level valleys

floored with alluvial gravel, sand, and silt, washed and accumulated through many ages from the mountains and charged with the alkaline salts forming so marked a characteristic of the country. In the lowest part of the valleys there is typically an alkali flat, or playa, where in the winter season water collects in a shallow sheet and converts the soil into a soft, clay-like mud that is bottomless and impassable. In the summer-time the flat is dry and hard, and often shows white and glistening from an incrustation of alkaline salts. The mountains are furrowed with many gulches and narrow cañons which here and there in their courses expand into pleasant, meadow-like basins locally termed "parks."

The annual rainfall in the valleys is very low, the precipitation increasing slowly with the altitude up the mountains. At the same time the air is naturally excessively dry, the moisture content being, according to Gilbert,[1] but 45 per cent. of that necessary for saturation, as against 69 per cent. in the region between the Mississippi river and the Appalachian mountains, and the power of evaporation annually 80 inches as against 22 inches over Lake Michigan. From the lower ranges the snow that falls commonly evaporates without melting or melts without the formation of definite streams. The heavier snows of the higher ranges feed scattered springs and the small streams running down the cañons and out a varying distance into the valleys, where, often becoming charged with alkali, they sink into the parched soil and are lost. Many of the springs at the bases of the mountains are brackish or salty, and some are warm.

The vegetation of this arid region, while generally scant, is more abundant than would generally be expected; and there is no part even of the valleys in the driest times wholly devoid of plants, excepting limited portions of some of the playas most heavily charged with alkali, and especially the Great Salt Lake desert. In these places scattered clumps of the several "greasewoods" occur about the margins. The vegetation of the valleys and slopes, as well as of the hills and of much of the mountain-

[1] *Lake Bonneville*, pp. 6 and 7, 1890.

sides, possesses a monotonous uniformity of appearance due to an immense profusion of individuals of but few species. Those most constant and conspicuous are shrubby and suffrutescent plants which occur almost to the exclusion of other forms. No trees are found among them. Grasses grow in tufts; but these die out with the advancing season everywhere excepting in favored recesses and parks of the mountains. Turfing grasses, such as are so conspicuous in the plains region east of the Rockies, are not found excepting certain salt forms almost worthless for pasturage and confined to the alkaline meadow lands. As a protection against the intense dryness of the region these characteristic plants have mostly much reduced leaves with tough cuticle and often a dense covering of hair. The prevalent color of the vegetation is a wearisome gray or dull olive. Only at long intervals is this monotony of color relieved by the bright green of the richer vegetation of the oases about springs and along streams.

It is impossible for plants of the higher orders to thrive in the strongly alkaline soil in the lower portions of the valleys. The plants growing here belong for the greater part especially to the Chenopodiaceæ, of which one of the best known and most widely distributed is the common greasewood (*Sarcobatus vermiculatus*). Of similar habit and abundance is *Halostachys occidentalis*. Along with these, among other abundant plants of the same family, occur *Suæda depressa* and especially the peculiar glasswort (*Salicornia herbacea*) which in marshy saline ground flourishes over wide areas, and forms with its brightly colored, fleshy stems a pleasing feature of the landscape.

Farther back from the playas are found the chenopods, *Eurotia lanata* or the white sage, the familiar and excessively abundant *Grayia polygaloides*, the larger spinescent *Shepherdia argentea*, several species of *Atriplex*, and others.

Intermingling to some extent with the last mentioned forms and beyond the alkaline soil of their preference wholly predominant, is the ever common sagebrush (*Artemisia tridentata*). This form almost completely usurps the better soil of the valleys and plains, and extends far up on the mountain-sides.

With the sagebrush over the gravelly foothills are also found *Tetradymia canescens*, *Purshia tridentata*, and *Cowania mexicana*. In the swales, and in similar places favored by the drainage, *Bigelovia* is a common plant. The smaller suffrutescent rabbit-brush or the torchweed, *Gutierrezia*, abounds almost everywhere and often forms a conspicuous feature over large areas. Among the Artemisias occur here and there the brilliantly flowered cacti, and during the spring and early summer such herbaceous forms as the common *Phlox longifolia*, various *Gilias*, *Phacelias*, *Lithospermums* and *Echinospermums*, *Œnotheras*, *Allium*, several species of *Astragalus*, the gaudily flowered *Balsamorrhiza sagittata* and other Compositæ, and later in the season in some parts the beautiful sego lily, *Calochortus nuttallii*.

The lower mountains, like the valleys, are chiefly destitute of trees and are overgrown with bushes and shrubs of the kinds found on the lowlands or with these, because of the exposed positions, more scattered and dwarfed. On the higher mountains, however, coniferous woods occur in tracts of varying extent. At lower levels the cedar (*Juniperus*) is everywhere common, and at higher levels also is the spruce. The nut pine (*Pinus monophylla*), of so much importance to the Indians, is abundant in parts of certain ranges, of which may be mentioned especially the Deep Creek mountains. The mountain mahogany (*Cercocarpus ledifolius*), also formerly much used by the Gosiute, is widespread. Among herbaceous plants common over the mountains are such forms as *Ferula multifida*, species of *Peucedanum*, the much-prized *Carum gairdneri*, yamp and other Umbelliferæ; *Castilleja parviflora* and *Pentstemon glaber; Heuchera* and *Mitella*, and other Saxifragaceæ; the larkspurs, *Delphinium menziesii* and *bicolor; Eriogonums*, and various species of Compositæ.

In the cañons containing streams of water occurs a comparative wealth of plants not found elsewhere. Of the trees and shrubs on the stream banks there are various species of willow, the quaking aspen, the cottonwood, the birch (*Betula occidentalis*), the service-berry (*Amelanchier alnifolia*), the wild or choke-cherry (*Prunus demissa*), haws (*Cratægus rivularis*), the

kinnikinnick (*Cornus stolonifera*), the elder (*Sambucus racemosa*), the maple (*Acer glabrum*), the sumac or "squaw-berry" (*Rhus aromatica*), and the wild rose (*Rosa californica*, *fendleri*, and *nutkana*). In the richer soil of cañons and foothills the scrub-oak (*Quercus undulata*) grows densely. As an undergrowth over the sides of the cañons the box (*Pachystima myrsinites*) and Oregon grape (*Berberis repens*) are common, while various species of wild currant (*Ribes*), *Ceanothus velutinus*, and other shrubby plants, often grow in dense patches. Of common herbaceous plants growing in favorable places and season may be mentioned such forms as *Erythronium grandiflorum*, *Fritillaria pudica*, *Smilacina amplexicaulis*, and other lileales, *Claytonia*, *Geranium richardsoni*, *Wyethia amplexicaulis*, *Mimulus luteus*, *Mentha* and other Labiatæ, *Clematis*, *Aquilegia*, and others of similar rank.

In this ill-favored region large game was not relatively abundant; and the Gosiute could not be primarily a hunting tribe. They seem to have placed no regular dependence on forms larger than the abundant jack-hare, although when opportunity was propitious they sometimes undertook the securing of antelope and deer. At one side of Mill Creek cañon, which is in the Wahsatch mountains and opens into the Salt Lake valley, there is a mountain valley which, broad and open at its upper part, as the cañon is approached narrows to a vertically sided gorge and terminates abruptly at a precipice of great height. Occasionally the Gosiute resorted to this richer territory beyond their proper range, and, at opportune times, surrounding deer or antelope, would drive them down the valley to the gorge, where the terrified animals, finding retreat impossible, leaped over the precipice to their death. From this the Mill Creek cañon is known to the Indians as *Tĭn-go-ûp*, which means Rock or Precipice Trap. Some of the older men also tell of a great "trap" artificially constructed in the Cedar mountains and formerly kept in repair from year to year. This was a great V-shaped runway, the sides of which were fences or walls formed of logs and brush. At the time of a drive all available men and women would make a wide semicircle about antelope

that might be in the region, and shouting and continually closing in, would drive the animals to the narrow apex of the run or corral where hidden hunters easily killed the bewildered game.

While antelope, deer, bear, and other large game formed scarcely more than an occasional source of sustenance for the Gosiute, the jack-hare, exceedingly common throughout the region, was highly important to them, and was regularly a chief dependence in fall and winter for meat, raiment, and blankets. After a hunt the meat was dried and preserved, while the skins were dressed and made into fur ropes, which were then bound together to form blankets or articles of clothing which are very warm and serviceable. It was the custom to hold great rabbit hunts or "drives" every fall. In these drives the whole tribe engaged and was sometimes joined by neighboring bands. The common procedure was to construct of greasewood, sagebrush, or other convenient material, a great V-shaped enclosure, similar to the one described, with a hole at the narrowed apex leading underground into a passage covered above with a hide. The hares were surrounded and driven into the enclosure by the coöperation of men, women, and children. As the hares reached the apex of the V they would run into the underground passage, from which they were quickly removed one by one and despatched by men stationed there for the purpose. Sometimes the hares were merely driven into the heap of brush where, bewildered and impeded, they were easily killed with clubs.

In the spring and early summer the ground squirrel, or spermophile, everywhere present, was trapped or hunted, originally with bow and arrow. It is still sought for food and is much relished. Certain of the larger desert lizards, as well as snakes, were also formerly eaten; but these forms are no longer sought for this purpose, although declared to be palatable.

An abundance of food was furnished at times by the black cricket (*Anabrus simplex*), several species of locusts, and the cicada. The crickets often occurred in vast swarms, or "armies." They were not only eaten in season, but were dried and preserved for winter use in baskets or other receptacles

covered in pits. A favorite method of cooking fresh crickets was to place them in pits lined with hot stones in which they were covered and left until thoroughly roasted. This dish is really very palatable and is compared by the Indians to the shrimp, which they accordingly term the "fish cricket." Locusts were similarly prepared and preserved for winter use. The cicada was eaten not only after cooking, but also fresh. Indian children may still often be seen catching these insects, deftly removing head and appendages, and eating them at once with evident relish.

Vegetal Products used as Food

It was, however, on the products of the plant kingdom, as available in the flora in some features touched above, that the Gosiute placed their chief dependence for food, a fact that in trapper and pioneer days led to their being included under that omnibus and odious designation of "Diggers," or "Root Diggers." Living close to nature and impelled by strict necessity, they knew the plants of their region with a thoroughness truly surprising. From root to fruit they knew the plants in form and color, texture and taste, and according to season and habitat. Whatever portion of a plant could serve in any degree for food they had found out; and what would poison or injure they knew to avoid. From plants, too, they obtained most of their medicines, which were many, as well as the materials for making most of their household and other utensils. The education of the Gosiute children in a knowledge of these and other matters important to them in their original state was formerly given with much care by the grandparents; but since the change in mode of life consequent on the coming of the white race, this education, or drill, is much neglected. As a result the knowledge concerning plants and their properties possessed by the younger generations is very inferior to that of the older men and women now fast passing away.

The Gosiute ate the leaves and stems of many plants as "greens" after boiling them in water according to the usual custom. Some members of the Cruciferæ and Compositæ con-

taining acrid or otherwise distasteful oil or other principles were sometimes taken through a preliminary course of repeated washings to remove the objectionable taste so far as possible, after which they were cooked and eaten as usual. The leaves and petioles of the arrow-root (*Balsamorrhiza sagittata*), termed *ku'-si-a-kĕn-dzĭp*, furnished one of the most used and dependable foods of this type. This is an abundant and conspicuous member of the early season flora throughout the region. The hastate leaves of this plant, mostly radical and forming a tuft, are eight or nine inches long with still longer petioles, and the flowers are large showy yellow heads like those of the sunflower. *Cymopterus longipes* (*an-dzûp'*) is an umbellale, widely distributed and abundant like the preceding form. It is an early spring plant with more or less tufted leaves of pinnately decompound form, and with umbels of yellow flowers. The leaves of this plant in season furnished a standard and favorite dish. The leaves of the closely related *Cymopterus montanus* were not eaten, but the caudex and basal portions of petioles occasionally were. Among many other plants of which the leaves were eaten may be mentioned *Troximon aurantiacum* (*mu'-tci-gĭp*), native watercress (*Nasturtium*), *pa'-mu*, and *Ranunculus aquatilis*, the entire plants of the latter two being used. The entire plant of the cancer-root (*Aphyllon fasciculatum*), *po'-ho-ru*, a pale leafless parasite growing on the roots of sagebrush and species of *Eriogonum*, was also eaten. The stems of the plumed thistle (*Cnicus eatoni*), *po'-gwo*, furnished food, as did also in quantity the lower tender stems and root-stocks of the bulrush (*Scirpus lacustris* var. *occidentalis*), *saip*. A plant of primary interest to the Gosiute, because it furnished one of their most valued medicines but also was the source of a certain amount of food, is *Ferula multifida* (*to'-dzûp*). Only the youngest shoots just as they were breaking through the ground were used as food, and these but rarely, the ill-tasting older growths being always rejected as unusable.

Of the plants that furnished food to the Gosiute in the form of roots, root-stocks, tubers, and bulbs, none is popularly so well known as the beautiful *Calochortus nuttallii—si'-go* to the

Indians, and hence "sego," the common name among the white residents of Utah. It is the State flower. The bulbs of this lily were formerly gathered and used for food. Not only were they eaten in season, but they were preserved in quantity for winter use by being dried and placed in pits, like those hereafter to be described, from which they were taken as needed, and were then most commonly cooked with meat in the form of stews. When the Mormons first arrived in Utah and the struggle for food was so severe with them, they learned from the Indians the value of this article; and the digging of sego bulbs in the spring did much in many families to ward off starvation.

Another lily furnishing an edible bulb is *Fritillaria pudica* (*win'-a-go*), a yellow-flowered form blooming in the mountains in early spring. It was much less important than sego. The Camassia, *pa'-si-go*, furnished a more important food of this class, and in some sections where available was extensively used. The bulbs of the wild onions (*Allium bisceptrum*, etc.), *küñ'-ga*, and those of the common spring beauty (*Claytonia caroliniana*), *dzi'-na*, were also eaten in season, but are said not to have been preserved for winter use.

One of the most highly prized of all food plants among the Gosiute was *Carum gairdneri* (*yamp* or *yam'-pa*), which occurs in abundance in favorable places in the higher mountains. It grows to a height of four feet and bears rather few pinnately compound leaves. The roots are swollen and tuberous. It is these that are eaten. They are sweet and pleasant to the taste, and are nutritious from the presence of an abundance of starchy material. The Indians were very fond of it and still frequently gather it. The usual method of cooking the roots was to roast them in pits lined with hot stones, in which they were commonly covered and left over night. They were sometimes boiled. The roots were cached in quantity in pits for winter use.

An industry of the Gosiute and related tribes very frequently noticed by early travelers was the gathering of the seeds of grasses and various other plants, a source of a food of fundamental importance. While many kinds of plants furnished

seeds that were used, by far the greater proportion came from the grasses and members of the Chenopodiaceæ. Few grasses occurring at all abundantly did not furnish seeds, as those mentioned in due order in the later lists will indicate.

Various chenopods, previously mentioned as forming such a predominant and characteristic element of the flora over the valleys and flats, furnished a great quantity of nutritious seeds; and in some localities species of *Atriplex* and *Chenopodium* in particular, and in wet places *Salicornia*, appear to have been the chief source of supply. Plants of these genera are so often seen growing thickly over wide areas that they would seem in places to have furnished a food supply limited only by the capacity and inclination of the Indians to harvest it. Especially *Atriplex confertifolia* (*suñ*) is abundant in the alkaline valleys throughout the region, occurring in enormous profusion in the more favorable places, so as to have been much depended on. Another species also furnishing seeds is *Atriplex truncata* (*a'-po*). The brittlewort or samphire (*Salicornia herbacea*), *o'ka* or *pa'-o-ka*, previously mentioned, is a low, leafless herbaceous plant with fleshy, jointed stems. It has been compared in appearance with branching coral, to living groves of which the resemblance is accentuated by its presenting colors in many shades of red, pink, and yellow. The plant occurs over extensive areas in marshy ground about the shores of Great Salt Lake and elsewhere through the region, often thickly covering the ground for miles where no other plant is found. The seeds of this plant when made into meal and cooked are said to have furnished an article tasting like sweet bread and one of which the Indians were fond.

Of Cruciferæ furnishing edible seeds the most important seems to have been the hedge mustard (*Sisymbrium canescens*), *ꝑoi'-ya* or *po'-nak*, the seeds of which were gathered and used n the ordinary way, but are also said to have been ground up and mixed with snow in winter, and in this form eaten as a kind of confection. In the borage family the species of Lithospermum, *tso'-ni-baip*, more especially, furnished a portion of seeds. Seeds of the mints, *Dracocephalum parviflorum* and *Lophanthus*

urticifolius, both known under the name *ba'-gwa-nûp* or *toi'-ya-ba-gwa-nûp*, were also regularly gathered. Especially nutritious and important were the seeds beaten from the heads of a number of Compositæ. Among various others may be mentioned the arrowroot (*Balsamorrhiza sagittata*), previously mentioned as furnishing edible leaves, the related *Balsamorrhiza hookeri* (*mo'-a-kûmp*), *Wyethia amplexicaulis* (*pi'-a-kĕn-dzĭp*), *Gymnolomia multiflora* (*mo'-ta-qa*), and the sunflower (*Helianthus*), *i'-ûm-pi*. The familiar arrowgrass (*Triglochin maritimum*), *pa'-na-wi*, and the cattail (*Typha latifolia*), *to'-ĭmp*, are also to be included here. The ripe spikes of the latter were gathered and the bristles were burned off, by which process the seeds were freed and at the same time were roasted.

The seeds of all these and the other plants were collected in approximately the same way. They were first gathered in large baskets, commonly about two and a half feet wide by three feet deep, and designated by the name *na'-pi-o-sa* or sometimes as *wu'-tsi-a-nûmp*. These baskets were closely woven, and were made tight by means of the gum or pitch of the pine by which the meshes were thoroughly filled, as with water-jugs. The ripe heads of grasses, or the seed containing portions of other plants, were knocked or swept into this basket (*ta'-ni-kûm-ma-wu''-ti-ga*) by means of a second smaller basket about the size of a three- or four-quart milk-pan and known as a *da'-nĭq*^{u}. Often this *da'-nĭq*^{u} was provided with a handle projecting from one side like the handle of a dipper, and along the side opposite the attachment of the handle with a flat piece of wood sharpened to an edge like the blade of a knife, its use being to strike against and cut off the fruiting portions of the plants. The large basket might be held in convenient position beneath taller plants with the left hand while in the right the smaller one was used to sweep across the tops of the plants; but more frequently the *na'-pi-o-sa* was carried beneath the left arm or swung upon the back. When in the last position a quick sweep of the *da'-nĭq*^{u} was made from right to left across the plants and up over the left shoulder so as to carry the loosened material into the receptacle.

The materials gathered in the baskets in this way were carried to some convenient and suitable place near the encampment and piled upon the ground preparatory to threshing. This operation, *man-gop'-ma''-wu-pain* ("to beat seed vessels," "to thresh"), was performed simply by beating thoroughly with sticks or paddles until the chaff, pods, and other accessory parts were fully loosened from the seeds. The separation of the seeds from the chaff and other waste parts—the winnowing—was next attained by slowly shaking the threshed material from a special winnowing basket or fan held at a height when a wind was blowing which could carry away the chaff while allowing the heavier seeds to fall more directly to the ground or upon skins spread for the purpose (*ma-wi'-a-nĭn*, "to winnow"). The winnowing-basket (*ti^{n}'-u-wa*) was circular or ovate in form, and was shallow, being but gently and gradually depressed from the margin toward the center. Larger or heavier materials were separated by hand. At the present time the Gosiute grow wheat and oats in considerable quantity, which they thresh and winnow in this primitive way, as do also various other Indians. The threshing is sometimes done by means of horses driven round and round in a circle over the cut grain spread out on a floor or on hard ground, the tramping of the horses accomplishing what is more commonly effected by the beating with sticks or paddles. The same method is used not only among other Indian tribes in the West and by the Mexicans of the Southwest, but also among peoples of the Orient.

After the winnowing, the seeds were stored in appropriate baskets or other receptacles for winter, the containers being covered in pits in the usual way. Before using, the grain was made into meal by being ground by hand in the well-known Indian metate. Among the Gosiute this was a flat stone, *pa'-to*, generally oblong in form, upon which the seeds were placed and pulverized by means of a sub-cylindrical grinder, or mano, *du'-su*, which was rubbed back and forth under pressure. This operation in time resulted in wearing out the metate over the middle portion and leaving an elevated rim along each side, which the better held the grain in place. The meal thus pro-

duced was eaten chiefly in the form of porridge or mush, or was baked into crude cakes.

Of high importance to the Gosiute as food was the fruit of the nut pine (*Pinus monophylla*), *ti'-ba-wa-ra*. The expedition to the mountains for pine-nuts each fall was one of the great fixed events of the year to them; and, to this day, when so little dependence is placed on most of the original sources of their food supply, pine-nuts (*ti'-ba*) are gathered regularly in considerable quantity and kept for their own use and to some extent are marketed among the whites in trade. In visiting the regular Gosiute encampments during the pine-nut season one may feel certain of finding them in great part deserted. The method of obtaining the nuts is to gather the cones and partially to char them in a fire: in this process the nuts are roasted. The nuts are next beaten out of the cones. If further roasting be found necessary it is done in ovens. The roasted nuts are eaten directly by some after shelling, by others with the shells on; or they may be ground into meal on a metate. Formerly the nuts, after roasting, were placed in specially constructed, tall, sack-like baskets, in which they were preserved in pits or cellars.

The acorns, *ku'-ni-ro-ûmp*, of the Rocky mountain or scrub oak (*Quercus undulata*, var.), *ku'-ni-ûp*, found over portions of this territory, were used as food in season; but they are said not to have been preserved for winter use. They were by no means of such important service to the Gosiute as the fruit of some oaks were to other tribes, such as those of California.

Of succulent fruits that of the service-berry (*Amelanchier alnifolia*), *ti'-ûm-pi*, was probably most important. Not only did it furnish food in season, but it was preserved in large quantities for winter use. For preservation the berries were mashed, spread out in layers in the sun, and allowed to dry thoroughly; the dried fruit was then placed in pits lined with grass. Immediately over the top of the fruit was placed a layer of the leaves of sagebrush, the whole being overlaid with cedar-bark and covered finally with earth. For use in winter the dried material was broken up on the metate and boiled

with or without meat. To this was often added a portion of certain seed meals said to improve the flavor and general palatability. The native currants (general term, *po'-go-nûp*) were gathered and preserved in the same way as the service-berries. Among these currants were the black or Missouri currant, *Ribes aureum* (*kai'-i-ûmp*); *Ribes divaricatum* (*wĭ'-sa-po-go-nûp*); and *Ribes leptanthum* and *lacustre* (*ai'-go-po-gûmp*). The fruit of the wild cherry or western choke cherry (*Prunus demissa*) was similarly used and preserved. The fruit of the raspberry (*Rubus leucodermis*), *tu'-kwûn-dau-wi-a* or *tu'-kwûn-da-mi*, and of the strawberry (*Fragaria vesca*), *äñ'-ka-pa-ri-ûmp*, were sought and used in season; but no effort was made to preserve them for later use. The berries of the rose (*Rosa californica* and *fendleri*), *tsi'-ûmp*, were also among the foods.

Beverages

Of beverages the Gosiute seem to have had but few originally. A kind of tea made from the leaves of the mint (*Mentha canadensis*), *pa'-na-tĭ-so*, is said to have been drunk considerably and to have pleased the taste of many. The leaves of the shrub, sometimes termed "mountain tea" (*tĭn'-ai-hya*) in early days, were also used for making tea. Another plant termed *tu'-tom-pi* by the Indians, but which I have not identified among those known to me in the immediate region, is said to possess a wood from which a good beverage was formerly made.

Chewing-gums

There were a number of chewing-gums. One was supplied by the gum of the Douglas spruce (*Pseudotsuga douglasii*), *wañ'-go;* also the latex of *Asclepias*, and of *Senecio* (*tĭm'-pi-dza-na-kwo*), among others, was dried and converted into a gum. The chewing-gum that seems to have been most prized, however, was obtained from the roots of the greater rabbit-brush (*Bigelovia douglasii*), *si'-bû-pi*. The inner part of the root having been rejected, pieces of the outer portion were taken into the mouth and chewed, a gummy substance gradually separating out and the more fibrous material being gradually removed.

This gum is sweet and pleasant to the taste. Indian children and the elders as well may often be seen preparing it.

Smoking

A number of plants furnished the Gosiute material for smoking. Most highly prized among these was the native tobacco plant (*Nicotiana attenuata*), *pu'-i-ba-u*, which grows in dry places to a height of a foot or two, and bears greenish white, salverform flowers from an inch to an inch and a half long. The leaves, borne on slender petioles and ovate to lanceolate in form, were dried and used as ordinary tobacco. Whether the related *Nicotiana quadrivalvis*, a native of Oregon and formerly cultivated by various Indians from that state eastward as far as the Missouri, was formerly grown and used by the Gosiute is uncertain. *Vaccinium cæspitosum* (*tĭ'-da-kai-mi-ya*) and *Silene menziesii* (*yo'-go-ti-wi-ya*) also furnished leaves which were similarly dried and used for smoking. Ranking in importance with the tobacco plant proper was the kinnikinnick (*Cornus stolonifera*), *äñ'-ka-kwi-nûp*, the inner bark of which was smoked either alone or mixed with tobacco.

Domestic Objects

For the making of baskets, bowls, water-jugs, baby-baskets or cradles, etc., various species of willows (*si'-o-pi*), such as *Salix lasiandra*, *longifolia*, and others, supplied a considerable proportion of the material, though, when available, many much preferred the shoots of the cottonwood, *so'-o-pi*, because of their greater toughness. For the frame in their several types of basketry, branches of the service-berry (*Amelanchier alnifolia*), *ti'-ûm-pi*, were used, because of their strength and toughness. Water-jugs, cooking-bowls, seed-baskets, winnowing fans and other vessels designed to hold water or fine material were made impervious by being coated on the inside, or both inside and out, with the gum of the nut-pine. A smooth, glaze-like inner surface was often supplied to these vessels, as also more especially to earthen dishes, by coating them with a mucilage obtained from *Malvastrum munroanum* (*koi'-na-komp*). This

was obtained by macerating or mincing the stems and leaves of the plant in water or simply by drawing it with pressure across the surface to be coated.

Bows were most usually made from the wood of the mountain mahogany (*Cercocarpus ledifolius*), *tu'-nûmp*, and arrows from the wood of the service-berry. The wood of the kinnikinnick was sometimes used for the framework of snowshoes.

Originally the wood of the sagebrush (*Artemisia tridentata*), *po'-ho-bi*, was largely used, when (as it usually was) available, for producing fire by friction. For the same purpose, among others, the dried roots of the following were used: cedar, *wa'-pi;* mountain mahogany, *tu'-nûmp;* and Shepherdia, *äñ'-ka-mo-do-nûp*.

Habitations

The winter lodges were made almost entirely from the cedar, *wa'-pi*. The main structure was built, in the usual shape, of logs and poles of this plant, the whole being thatched with the smaller branches and the bark, the latter specifically termed *i'-na-wa-tsĭp*. For a covering over the ground within the lodges, the bark and finer branches of the cedar, or grasses, were used. It was, no doubt, Gosiute lodges that Captain Stansbury saw in 1849 when traveling through Skull valley on the western side of Great Salt Lake. He writes: "In a nook of mountains, some Indian lodges were seen, which had apparently been finished but a short time. They were constructed in the usual form, of cedar poles and logs of considerable size, thatched with bark and branches, and were quite warm and comfortable. The odor of the cedar was sweet and refreshing."[1]

Medicinal Plants

The Gosiute attained, empirically, considerable knowledge concerning the medicinal properties of the plants of this region that was invaluable to them. It may be noted that almost all of the valuable remedies in our own pharmacopœia also were first found out and used empirically; hence it is not so surprising to find that many of the remedies used by the Gosiute are

[1] *Expedition to the Great Salt Lake*, p. 111

closely related to some of those which we have used for the same purposes. But, naturally, superstition among these Indians also played a large part; and we find them often going through a procedure or applying a treatment the value of which must be regarded as wholly fictitious.

Superstitious beliefs and practices seem to have prevailed especially where animals furnished the material used as medicine or otherwise played a part in the treatment of disease. As one of the less involved cases may be mentioned the procedure in procuring rattlesnake oil, used for rheumatism. The person having secretly found a rattlesnake must address it in some such way as this: "My good brother, you are powerful; I wish you to help me." The rattlesnake must then be killed by a single shot directed from bow or gun unerringly through the head. The body of the snake was then opened and its fat stripped into a receptacle, and the body was buried so that it should be seen by no one else. The same procedure must be repeated with each snake used. Only when this method had been carefully followed was the oil when subsequently rubbed on the affected organ supposed to be curatively effective.

As a second example may be cited the procedure by some believed to effect a cure of persistent nose-bleeding. The person affected must take secretly some of the blood from his nose to a nest of the red or occidental ant (*Pogonomyrmex occidentalis*), into an excavation in which it must be poured so that it would be consumed by the ants. No dog or other animal must be permitted to touch the blood. If all had been faithfully carried out cessation of the hemorrhage was supposed to follow.

The great majority of the many medicines used by the Gosiute were products of the plant kingdom, though to a limited number of animal substances and preparations curative qualities were attributed. As above stated, some were of unquestioned service, containing active principles identical or related closely in not a few cases to those of plants used or formerly used by our own practitioners. Often several different medicines might be used for the same ailment, or what was regarded as the same, the one selected depending on season, availability, or personal

preference. In some cases medicines were combined and given as a mixture, in which case each constituent was supposed to exercise its own peculiar virtue. Medicines were classified according to use, the classification being in correspondence with their categories of disease. Thus medicines for wounds and cuts were classed as *i'-a-na-tsu;* for bruises and swellings, *bai'-gwi-na-tsu;* for burns, *wai'-a-na-tsu;* for coughs and colds, *o'-ni-na-tsu;* for bowel troubles, *koi'-na-tsu;* for "worms," *wu'-i-na-tsu;* for venereal diseases, *tĭm'-bai-na-tsu;* for rheumatism, *tso'-ni-na-tsu;* for the blood, *bu'-i-na-tsu;* for bladder and kidney troubles, *si'-na-tsu;* etc.

In setting fractured bones in the limbs, sticks of some convenient wood about half an inch thick and of convenient length were used as splints. These were tightly bound in place by means of deerskin cords passed from one to the next, about which it was wound, and so on round and round the limb in a spiral. A packing between and beneath the splints was supplied by the reed (*Phragmites*) or other grass. It is said that a paste mixed with this or some similar plant appropriately cut up was sometimes used, the whole drying beneath the splints and about the limb into a kind of cast that was rigid and effective. In one case of fracture of the leg observed under treatment by the writer, movement of the foot was prevented by means of flat pieces of wood tied firmly againt the sole with deerskin strings passing from the splintwork sheath.

In case of a wound from arrow or gunshot, a paste made by pounding or by chewing the root of the arrowroot (*Balsamorrhiza sagittata*), *ku'-si-a-kĕn-dzĭp*, previously mentioned among food plants, was applied. If the hemorrhage was severe, a ligature was applied on the central or proximal side when possible. A tea made by twisting the juice from the roots of *Mitella* (*to'-sa-na-tsu*) or related form was then given internally, the effect being to hasten elimination and purging. Regarded as considerably more efficacious than the arrowroot was the root of *Ferula multifida* (*to'-dzûp*), which is strong and rank in taste and smell. It was used, in essentially the same way as the arrowroot, upon wounds, cuts, or bruises, where the

skin was broken. In case of compound fractures this was the application made to the wounds in preference to all others. The root for use, as observed by the writer, was first minced with a knife and thoroughly ground to a pulp by crushing upon a clean, flat stone with another one used as a pestle. The paste was then smeared over the wound and bound in place. It was used as a dressing throughout the progress of healing, and it seems especially to have been valued where there was infection. Among other plants furnishing preparations used on wounds, cuts, or sores, may be mentioned *Cnicus eatoni* (*ai'-wa-bo-gûp*) and *Gilia* (*i'-am-bĭp*).

Among remedies supposed to have virtue in reducing swelling due to bruises or other causes may be mentioned first the roots of *Valeriana edulis*, which were pounded to a pulp and rubbed externally. Another was made by steeping the roots of *Wyethia amplexicaulis* (*pi'-a-kĕn-dzĭp*). The flax (*Linum lewisii*) furnished a preparation used in the same way, as did also the roots of *Mentzelia lævicaulis*, among various others. One informant stated that cases of persistent edema in the limbs were sometimes treated as follows: By means of a sharp flint chip the swollen member was cut in numerous places from one end to the other, and allowed to bleed freely. Next day the limb was tied proximally and a vein in a favorable position was opened by means of a pointed stick. The blood was allowed to flow from it for some time, after which the wound was stopped and the entire limb covered with a salve made from the roots of *Valeriana*, or of some other plant yielding a *bai'-gwi-na-tsu*, and well bandaged.

For the treatment of burns the most prized remedy was furnished by *Spiræa cæspitosa* Nutt. (*tĭm'-pĭn-tĭm-bo-ûmp*), a shrubby, prostrate plant forming dense mats over limestone rocks and cliffs in the cañons. This plant has fleshy roots and short matted branches upon which the silky-villous leaves are arranged in dense rosulate clusters. The roots, after being cleaned and freed of their epidermis by means of a knife, were boiled in water until soft and readily reducible to a pulpy mass. This was then ready for use, the wet pulp being applied directly

in a layer over the burned part and bandaged in place. On fresh burns it was renewed usually four times each day. The remedy is still much valued, and in cases observed by the writer seemed efficacious. A moss (*Bryum*) is said by some also to have been used on burns. For the same purpose the green wood of the mountain mahogany (*Cercocarpus ledifolius*) was also sometimes charred, the charcoal formed being powdered, mixed with water, and applied to the burned part.

A number of plants furnished materials used as remedies for rheumatism. Such was *Valeriana edulis* (*toi'-ya-bĭ-tûm-ba-ga*), above mentioned, the roots of which are pounded up and rubbed on the affected parts. The common yarrow (*Achillea millefolium*) was also bandaged about affected joints, as were the steeped leaves of the sagebrush, *po'-ho-bi.*

Of remedies used for disorders of the alimentary tract there were many. A preparation much valued for intestinal disorders of babies and older children, but also used with adults, often as a secondary treatment in accidents or other disorders, was obtained from the roots of several of the Saxifragaceæ, especially *Heuchera* (*wi'-gûn-dza*) and *Mitella* (*pi'-a-näñk*). The medicine is purgative in action. Because of the color of the roots the preparation is commonly known as *to'-sa-na-tsu*, meaning "white medicine." It was given in the form of a decoction. A similar remedy, used especially with children, was prepared from *Arenaria triflora* var. *obtusa*. The wood of the choke-cherry (*Prunus demissa*), *to'-o-nûmp*, was sometimes scraped and from the scrapings a decoction made which was used also for bowel trouble, likewise more especially with children. In some cases of stomach trouble an emetic was given to relieve pain and to effect restoration. For this purpose the root of *Silene multicaulis* is said to have been used, this being mashed or ground up, put in warm water, and drunk. Another emetic was prepared from the poison sego (*Zygadenus nuttallii*), *ta'-bĭ-si-go-ûp*.

In cases where a person was thought to be suffering from worms or other intestinal parasites the gum from *Pinus monophylla* (*ti'-ba-wa-ra*) was sometimes put into boiling water and drunk as hot as could be borne.

The roots of *Peucedanum graveolens* (*i'-djaip*), etc., were used as a medicine called, from the high value placed upon it, *pi'-a-na-tsu*, meaning "great medicine." This was used for sore throat by being reduced to a pulp and applied directly by means of a finger. Sometimes a string was tied to a piece of the root and the latter then swallowed to be again drawn out over the affected part by means of the string. A decoction was also made from the root.

For colds, coughs, and pulmonary or bronchial affections a favorite remedy was prepared from the leaves of the cedar, *wa'-pi*. The leaves were boiled in water and the decoction drunk hot. During the winter season, in families where there are children, one is still likely to find a pot of cedar-tea on the fire. A remedy for coughs and general colds with the accompanying headache was also prepared by some by making a decoction of cedar-leaves and sagebrush-leaves in tea made from *Mentha canadensis* (*pa'-gwa-nûp*). Another remedy used for biliousness with severe colds was a mixture of *pi'-a-na-tsu*, previously mentioned, with some laxative or *koi'-na-tsu*, and the resin of the pine, a decoction of the three being prepared and drunk at intervals.

A tea or decoction prepared from the roots of *Lithospermum pilosum* and *multiflorum* (*tso'-ni-baip*) was much used for kidney trouble. It seems to be a strong diuretic. The writer has also seen it used for this purpose among the Ute.

The Gosiute had a considerable number of remedies (*tĭm'-bai-na-tsu*), severally regarded as efficacious in varying degrees for venereal diseases and other affections of the sexual organs. Among plants furnishing such remedies may be mentioned *Parnassia fimbriata*, *Spiræa millefolium*, and *Eriogonum ovalifolium*. The application was mostly in the form of a wash or a poultice.

A favorite remedy in cases of fevers was furnished by the leaves of the common sagebrush (*Artemisia tridentata*), *po'-ho-bi*. This plant is similarly much used among the white people in many of the outer settlements. Indeed, among many it is regarded almost as a panacea, being used for coughs and colds,

rheumatism, and other ailments, as well as for fevers, the application sometimes being external, sometimes internal, depending on the affection. In intermittent fevers the white sage (*Eurotia lanata*), *tci'-cop*, was used considerably.

Some Features of Word Formation in the Gosiute Language

The primary stems of the Gosiute language are chiefly verbal in character. They are monosyllabic in form and are largely further reducible to significant elementary sounds. The vowel sounds, where capable of dissociation in this way, represent general modes of motion that are modified or conditioned in definite ways by combination with consonants placed in the initial position. Hence, leaving aside secondary and exotic factors, the vital, active part of the language is found to be especially vivid. The verbs largely define themselves; and it is likely for this reason that it has seemed necessary for each verb or verbal combination to be set off or introduced by a general causal particle, *ma*.

In the composition of the primary stems to form secondary combinations and words, the more specific particles come first, those expressing the more general notions being final; that is, the first syllables control and restrict the final ones. The combination is thus such as clearly to suggest or to define the action or conception to be symbolized or represented. In verbs the final syllable in the indefinite form is often one that signifies some general action or mode of action. *N*, *ĭn*, or the more definite *kĭn* are such endings representing, in effect, making, producing, or simply acting or doing; *no* designates general motion or transportation, etc. By means of such endings nouns are readily converted into verbs. When a stem representing a noun in the objective or other relation is incorporated, it occupies the initial position in the verbal combination. Some simple examples of verb formation follow.

a, *ha* indicates movement or extension out or away from, in a straight line, projection, etc.

a'-pi (*a'-vi; ha'-bi*), a secondary root derived from the preceding

particle, + *bi* (*vi*), meaning primarily to accumulate, to rest upon, etc. Hence *a'-pi* means to rest or lie upon while extended, to lie out upon, to lie down. Used separately in speaking of persons, the form of the verb becomes *ha'-vi-do*.

pa'-ha-bi-no, meaning to swim. It is composed of *pa*, water, + *ha'-bi*, to lie extended, + *no*, indicating motion.

ka'-ri-no, to ride sitting down. Derived from *ka'-ri*, to sit down, + *no*, as in the preceding combination. Applied to riding in train, wagon, etc., in a general way.

pûñ'-ga-ri-no, to ride horseback. The preceding word with *pûñ*, representing *pûn'-go*, horse, incorporated.

ai'-no, to lope. From *ai*, a root meaning to spring or rebound, to leap, etc., + *no*, indicating locomotion as in the preceding words.

pañ'-go-ĭn, to dive. From *pa*, water, + *go*, root, meaning to penetrate, etc., + *ĭn*.

ki'-wa-tso-kĭn, to cut with scissors. From *gi'-wa* to bite or cut apart (*gi*, bite or cut into, + *wa* to press aside or apart, to separate), + *tso*, to squeeze or press together, + *kĭn*, explained above.

gwĭ'-ca-kĭn, to braid. From *gwa'-ci*, tail, braid, etc., + *kĭn*.

ba'-hu-ĭn, to smoke (tobacco). From *ba'-u*, tobacco, + *-ĭn*.

Nouns, with which we are here chiefly concerned, are readily derived from verbs and verbal combinations through the use of suffixes which, like the verbal endings previously mentioned, convey definite general or class ideas. Verbs are sometimes used as nouns without the use of such suffixes. Nouns compounded of simpler nouns or of other words are frequent. In the plant names hereafter given it will be seen that one noun in such compounds frequently bears a possessive or adjectival relation to the principal. In such cases this relation is indicated by the addition of *n* or *m*, or by using the particle *ûn* or *ûm* more discretely. For example:

ni'-am, my. From *nia*, I, + *m*.

ai'-tĭn-tain-ti, bore of gun. From *ai'-ti*, gun, + *n* + *tĭn'-ti*, hole, etc.

Tĭm'-pĭn-o-gwût, Provo river. From *tĭm'-pi*, stone, + *og'-wût*, river.

Ai'-bĭm-pa, Deep creek. From *ai'-ba*, clay, + *m*, + *pa*, water or creek, i. e., clay water.

to'-go-ûn-go-na, painted cup (*Castilleia*). From *to'-go-a*, snake, + *ûn*, + *gu'-na*, fire; i. e., snake fire.

The more important noun suffixes occurring in plant names are indicated below, in order.

1. *tci*, *tsi* (*tc*, *ts*). A common ending in names of living things or parts of such. In Gosiute it is more frequent in animal names. It also occurs in plant names, but with nothing like the frequency to be noted in the Ute where it is the commonest ending. Examples:

   See further under 3.
   po'-ni-ûts, skunk.
   yu'-nû-tsi, badger.
   mu'-tu-nats, humming-bird.
   yu'-ro-gots, Rocky Mountain jay.
   du'-ĭ-tci, child, baby.
   näñ'-kĭ-tci, ear. (Also as *näñ'-kûs*).
   deutc, brother-in-law.
   su'-go-pû-tsi, old man.
   o'tci, grandson.

2. *bi*. Indicating a living thing or part of a living thing. In the former case commonly followed by the ending considered under 1, as represented below under 3. Examples:

   bi, the heart.
   nam'-pi, foot. From *na*, meaning support or bottom part, + *m*, + *bi*.
   pam'-pi, head. From *pa*, top, summit, + *m*, + *bi*.
   tĭm'-pi, mouth. From *tĭ*, referring to teeth or cutting object, + *m*, + *bi*.
   mam'-bi, hand.
   mo'-bi, nose. From *mo*, indicating protrusion, extension, etc., + *bi*.

3. *bĭ'-tci*, *bĭtc*. The preceding stem, + the animate ending *tci* (*tc*). Indicates a living individual or something regarded as such. Very common in animal names, but only occasional in those of plants. Examples:

i'-a-bĭtc, gopher.
mom'-bĭtc, owl.
tu'-ko-bĭtc, wildcat.
we'-gom-bĭtc, turkey buzzard.
päñ'wĭtc, fish.

4. *-ûp* (*-ĭp*, *-p*). One of the commonest endings in plant names. As a noun ending it indicates substance or material, or simply thing or object; and, hence, in plant names it is often the practical equivalent of "plant." In some plant names, in fact, the ending is clearly a modification of *o'-pi*, meaning tree, wood, or plant. The regular suffix is added mostly to verbs, though it may also under some conditions be added to nouns. It may also be added to verbs to indicate completion of an action, forming thus regularly one of the past tenses or giving a participial effect. Examples:

tĭ'-kûp, food. From *dĭ'-ka-kĭn*, to eat, + *-ûp*.
pa'-gĭn-ûp, cloud. From *pa'-gĭn*, to produce water, + *-ûp*.
wai'-ûp, charcoal. From *wai'-hĭn*, to burn, + *-ûp*.
go'-ûp, enclosure, corral, trap, snare, etc. From *go*, a root in its most frequent sense meaning to surround or to enclose, + *-ûp*.
da'-pi-ûp, sock, stocking. From *da'-pi*, foot, leg, + *-ûp*.

5. *-ûmp*. Composed of the possessive *ûm* (*m*) and *-ûp* (*p*). The possessive belongs primarily to a preceding noun, but the combination has acquired the character of a largely integral suffix with a definite and peculiar force. It conveys usually the idea of material used for some purpose. It occurs frequently in the names of plants or of plant products used for food. In some plant names, etc., it is likely the representative of the combination of *ûm* and *ba*, meaning seed, or *bi*, hence "fruit." Examples:

tsi'-ûmp, roseberry. From *tsi'-o-pi*, the rose (the entire plant), + *-ûmp;* i. e., the part of the plant used for food, the fruit of the rose.

po'-gûmp, currant (the berry).
äñ'-ka-ti-wi-ûmp, sumach berries (fruit of *Rhus*).
so'-ko-ri-ûmp, Oregon grape (the plant). From *so'-ko-ri*, deer, + *-ûmp*, the plant serving as food for the deer.
wi'-ûmp, haws.

6. *na*. Used mostly as a prefix to designate a support, source, means, or instrument. Examples:

na'-dsi-ta, cane. From *na*, + *dsi'-ta*, stick, rod for thrusting, etc.
na'-tse-ya, handle (as of a teacup). From *na*, + *tse'-ya*, to carry.
na'-gwa-na, perfume. From *na*, + *gwa'-na-kĭn*, to give out a smell or odor.
na'-dĭ-ko, bait. From *na*, + *dĭ'-ka-kĭn*, to eat.
na'-dsa-to-wi, shell thrower (of a gun). From *na*, + *dsa'-to*, to draw or jerk out, + *wi*.

7. *-nûmp*. A combination of *na* and *-ûmp*, the two particles discussed under 5 and 6. It is a very common noun ending used to indicate means or instrument. Examples:

tĭ'-ki-nûmp, table. From *dĭ'-ka-kĭn*, to eat, + *-nûmp*.
ka'-ri-nûmp, chair. From *ka'-ri-do*, to sit down, + *-nûmp*.
go'-to-nûmp, stove. From (*ma-*)*go'-to*, to heat, make hot, to burn, + *-nûmp*.
tso'-tĭ-gi-nûmp, pillow. From *tso*, particle referring to the head, + (*ma-*)*rĭ'-gi*, to lay or place upon, + *-nûmp*.
go'-ti-nûmp, spear. From *go'-tĭn*, to thrust into, etc., + *-nûmp*.

Some words recurring frequently in combination in plant names may next be listed. In compounds, of course, these words do not occur, as a rule, in their entirety, but are represented by one or more of the more significant syllables.

As examples of words frequently entering into names to indicate a color characteristic, the following may be listed. The forms within parentheses represent the syllables ordinarily appearing in compounds.

to'-si-bĭt (*to-sa*), white.

tu'-o-bĭt (*to*), black.
äñ'-ka-bĭt (*äñ-ka*), red.
pu'-i-bĭt (*pu-i*), green.
o'-a-bĭt (*o-a*), yellow.
on'-ti-gait (*on-ti*), roan, etc.
ku'-tsĭp (*ku-tsi*), ashen, gray, etc. Meaning primarily ashes. Used in plant names especially to indicate the ashen or grizzly appearance due to thick growths of pubescence, etc.

Words indicating habitat occur with especial frequency in plant names.

ku'-tsĭp. In addition to the force above explained, this word in combination may also indicate growth as being in dry soil, etc.
pa, water.
tĭm-pi (*tĭm-pi*, *tĭn*, *tĭ*), rock.
toi'-ya-bi (*toi-ya*), mountain.
toi'-ya-wĭnt, cañon.

The two following are very frequent in names of plants where it is desired to indicate size, especially where there are several closely related forms to be discriminated and size represents a prominent difference.

pi'-ûp (*pi-a*, *pi*), large, tall.
tĭ'-ai-qû-tsi, *tĭ'-dû-tsi* (*ti-a*, *tĭ-da*), small, short, etc.

Naturally we find in plant names syllables representing or indicating some particular part or feature of the plant.

ba, *bi-a*, seed, fruit.
gûp, pod, seed-vessel, fruit.
o'-pi, wood.
a'-ka, *si'-a-ka*, stem, shoot, etc.
sĭ'-gi, leaf.
wa'-tsĭp, bark.
ai'-go-gûnt, thorn.
ai'-dĭ-wĭs, *wĭ'-sa*, spine, prickle.

A few of the more frequently occurring words used in plant names to indicate relations or characters other than those indicated above are these:

na'-tsu, medicine.
ĭ'-sha, wolf, and, secondarily, false.
wu'-da, bear.
pûñ'-go, horse.
tai'-bo, white-man, this being frequent in names more recently devised to indicate forms introduced into the region since the advent of the whites.

The more general terms used by the Gosiute to indicate plant groups were largely and primarily indicative of habitat, the ecological relations seeming most obtrusive to their minds. Next to the ecological relations, the economic seemed to have influence, and we find groupings based on uses in medicine and as foods. As examples of names applied to plants according to habitat may be mentioned the following:

pa'-bu-ip, applied to any plant floating upon water, or growing in water with leaves above surface, etc. From *pa*, water, + *bo* (*po*), root indicating position upon surface of, floating, rising, etc., + *-ûp* or possibly *o'-pi*.
tĭm'-bo-ip, applied to any plant growing upon or over rocks, etc. From *tĭm*, referring to rock as above explained, + *bo*, as in the preceding, + *-ûp*.
toi'-ya-da-tsĭp, applied to a shrub growing on mountain or in cañon.
pan'-di-sip, applied to a plant growing submerged in water. From *pan*, aquatic, + *dĭ'-si-*, meaning to penetrate or thrust into or beneath, + *-ûp*. It is also applied to animals, such as water-beetles, living beneath water.

In the case of the great majority of the plants dealt with in these pages the Gosiute names and uses have been tested repeatedly in order, so far as possible, to eliminate errors and to determine the standard as distinguished from the occasional and extraneous. The work has been carried on at different seasons, and tests have been made at such different times through various better-informed men and women of the tribe (Skull Valley division), who have been consulted both singly and in groups. However, there is a certain number of species

and forms of names which I have not been able to test to an extent wholly satisfactory to myself.

The Gosiute plant names, like our own popular ones, with which they are properly to be compared, are frequently generic rather than specific in compass, or, naturally, they may apply to species lying in technically different though usually closely allied genera. In some cases they are the practical equivalents of popular English names, while in other cases they are distinctly different in scope from these or may be without any name in our own language at all corresponding, for a large proportion of plants in the West are without popular designations of any sort. It often happens that a single kind of plant is known under two or more names to the Gosiute. In such case one name is commonly more general in scope and applicable to various other related or supposedly related forms, while the other may be strictly applicable only to the particular form under consideration. Then, again, the same plant may be regarded from different points of view, classed on correspondingly different bases, and so come to be designated under several class or generic names indicating these several relations. Thus, it may be regarded as to its habitat, as to its structure or appearance, as to its service to man or animal for food, or as to its use for medicinal purposes, etc. It may bear a different name indicative of each of these relations in addition to that which may be regarded as in a measure specific and restricted to it alone. The restriction in a name depended much on the importance or commonness of the plant, there being different names even for closely related species in many cases—proportionately much more numerous than is the rule among our own people.

In ordinary speaking among the Gosiute a long plant name may frequently be shortened through the omission or dropping out of one or more syllables. Such abbreviation may result in changes in the remaining syllable thus brought into different relations with each other through the operation of definite phonetic laws, as of rhythm in quantity, etc., which cannot be considered here. There may thus result several current forms from one original name.

The values of the letters used in recording Gosiute words in the present paper are approximately those of the Bureau of American Ethnology alphabet. Attention may be called to essential equivalence and, within the limits set by certain phonetic rules, the mutual interchangeability, (1) of *k* and *g*, (2) of *t*, *d*, and *r*, and, less completely (3), of *n* and *m*. Of the letters or sounds of the second group, *t* is most commonly initial in position, and *r* and *d* internal.

List of Plants according to Scientific Names, with Popular and Gosiute Equivalents

Abies menziesii Lindl. Balsam. *sa'-nañ-go-bi: sa'-na*, gum, pitch, etc., + *añ'-go-bi*, fir.

Abronia fragrans Nutt. Sand Puff. *ta'-ka-dĭ-di-a-rûp. ta'-ka-dĭ-da-rûp.*

Acer glabrum Torr. Maple. *pa'-go-ni-ûp. pa'-kwi-ni-ûp.* (Probably from *pa*, water, + *ku'-ni-ûp*, *kwi'-ni-ûp*, oak.)

Achillea millefolium L. Yarrow. *wañ'-go-gĭp.* Used commonly among the Gosiute in form of a tea for biliousness, headache, etc. Also applied externally for rheumatism and sometimes on bruises.

Aconitum fischeri, etc. Monkshood; Aconite. *ĭ'-ca-bo-go-nûp. ĭ'-ca-bo-gûp. ĭ'-ca-bo-gop.* Likely from *ĭ'-ca*, deceptive, false, baneful, + *bo'-gop*, fruit, berry, the name referring to poisonous properties as a result of which horses that eat it sometimes die.

Acorn. *ku'-ni-ro-ûmp. ku'-ni-ûp*, oak, + *ro* + *-ûp*. See further under Quercus.

Actæa spicata L. Baneberry. *toi'-ya-ba-gwo-no-gĭp.*

Agaricus. Mushroom. *so'-ai-tûmp.*

Agropyron repens Beauv. Blue-joint. *o'-ro-rop. o'-ro. o'-do. wa'-don-dzĭp. pĭ'-ga-yu-gĭp; pĭ'-ga-dĭt.* The seeds of this grass among those formerly eaten.

Allium bisceptrum Watson, **acuminatum** Hook. Onion. *küñ'-ga.* Bulbs eaten in spring and early summer. Not preserved for later use.

Alnus incana Willd. Alder. *u'-gu-dzûp.*

Alopecurus aristulatus Mx. Foxtail Grass. *tĭ'-so-nĭp: tĭ-* + *so'-nĭp*, grass.

Amaranthus sp. Amaranth. *ats.* Seeds formerly eaten and constituted an important source of food.

Ambrosia psilostachya DC. Ragweed. *tu'-ro-sip. tu-ro-vi*, black, + *sip*, sap, juice. Name apparently referring to "black sap." Occasionally used as a remedy for sore eyes. For this purpose the leaves were steeped in hot water and bandaged over the affected organ. The same name was often applied to *Iva axillaris*, q. v.

Amelanchier alnifolia Nutt. Service-berry; June-berry. *ti'-ûm-pi.* Berries formed a very important source of food among the Gosiute, being used both in season and preserved in large quantities for winter use. For preservation the berries were mashed and dried as previously described. If the berrying grounds were not too far distant from the winter encampment, the dried berries were cached on the spot to be obtained during the winter as needed or to be transported at a favorable time to a more accessible position. This plant also furnished the material preferred for arrows and for the framework of cradles and other forms of basketry.

Amsinckia tessellata. *tso'-hamp. ? ku'-hwa.* Seeds among those formerly eaten.

Anaphalis margaritacea Benth. and Hook. Everlasting. *mo'-ha-gûp.*

Androsace septentrionalis L. *? ka'-na.* See Lewisia.

Anemone multifida Poir. Wind-flower. *toi'-ya-mo-ha-gûp. toi'-ya-mo-gûp.*

Angelica pinnata Watson. *pa'-si-go-ûp; pa'-si-gwĭp.* Roots used as medicine. Occasionally spoken of as *ku'-i-gwa-nûp*, but incorrectly so, according to the best informed Indians.

Antennaria dioica Gaertn. Everlasting. *toi'-ya-na-tsu: toi'-ya-bi*, mountain, + *na'-tsu*, medicine. *? ku'-yi-ko-nûp* (*ku'-yi-gwa-nûp*). Said by one informant to have been used in case of snow-blindness, being steeped in water and bandaged over the eyes. The first name is probably not wholly specific.

Aphyllon fasciculatum Torr. and Gray. Cancer-root. *po'-ho-ru: po'-ho-bi*, sagebrush, + *ru*, son. The name is given in reference to this plant as a parasite upon the roots of the sagebrush. The entire plant was sometimes eaten.

Aplopappus macronema Gray and **parryi** Gray. *tĭm'-bi-mo-a-gwa-nûp.*

Aplopappus suffruticosus Gray, **macronema** Gray. *toi'-ya-ba-hwip. toi'-ya-ba-o-pi.* The name means in effect simply "mountain plant," and is not wholly specific.

Apocynum androsæmifolium L. Dogbane; Indian Hemp. *wu'-da-wa-nûp: wu'-da*, bear, + *wa'-nûp*, string, rope, fiber, etc. The reference of the name is to the strong fiber obtainable from this plant.

Aquilegia cœrulea James. Columbine. *pa'-wa-gûm-pi. pa'-o-gûm-pi.* Several Gosiute asserted that the plant furnished a medicine that acted on the heart. Seeds were sometimes chewed as medicine, and a tea made from roots was used for abdominal pains and when one was "sick all over."

Arabis holboellii Hornem. Rock Cress. *si'-bo-i-ûp.* Cf. *Cleome lutea*, to which the name is also applied.

Arabis retrofracta Gray. Rock Cress. *pi'-a-poi-na. pi'-a-si-bo-i-ûp.*

Arctium lappa L. Burdock. *mu'-pa-tai-gi-nûp.* The burdock is an introduced plant, and the name above given is used only by a limited portion of the Gosiute, having been formed relatively recently.

Arenaria biflora. Sandwort. Indicated under the indefinite or general term *tĭm'-bo-ip.*

Arenaria congesta Nutt. Sandwort. Classed as. a *koi'-na-tsu*, bowel medicine.

Arenaria triflora var. **obtusa** Watson. *wi'-djan-gwo-djop: wi'-dja*, pine-hen, + *n* + *gwo-djop. toi'-yan-tĭm-ba-dzap.* Like the preceding, classed as a *koi'-na-tsu.*

Argemone mexicana var. **hispida** Gray. Prickly Poppy. *? pa'-ra-tĭ-tsĭn-bo-gop. toi'-ya-na-bo-gop.*

Aristida purpurea Nutt. Triple-awned Grass. *o'-gĭp. o'-gwĭp. toi'-ya-o-gwĭp. yo'-nĭp.*

Arnica cordifolia Hook. *ta'-ni-kûmp.*

Arnica parryi Gray. *mo'-ha-gûp.* Cf. Anaphalis.

Artemisia biennis Willd. *pi'-a-wa-da. wa'-da. on'-tĭm-pi-a-wa (-da).* The seeds of this plant were formerly gathered and used as food extensively.

Artemisia discolor Dougl. and **trifida** Nutt. *ku'-tsi-pa-wa-tsĭp. ku'-tsi-pa-wats (-hwats): ku'-tsĭp*, ashes, ashen, gray, etc., + *pa'-wats* or *pa'-hwats.* Cf. in the following name. Seeds formerly eaten as with the preceding.

Artemisia dracunculoides Pursh. *pa'-hwats, pau'-wats. pa'-wa-tsĭp, pa'-wa-sĭp.* Seeds of this plant are oily and nutritious. Formerly much gathered as food. Said to have formed a favorite dish.

Artemisia tridentata Nutt. Sagebrush. *po'-ho-bi.* A tea made from the leaves of this abundant plant was much used as a medicine in febrile conditions, etc. The leaves were also used as a covering over berries and other foods preserved in caches.

Asclepiodora decumbens Gray. *? pi'-wa-nûp.* A chewing gum formerly made from the latex of this plant.

Aster adscendens Lindl. Aster; Starwort. *pa-otq'-ga.*

Astragalus iodanthus Watson. Rattle-weed; Buffalo-bean. *na'-da-pa-ra-na-gĭnt. da'-pa-rai-nûmp.* The name refers to the shoe-shaped legumes.

Astragalus junceus Gray. Rattle-weed. One of the *pûñ'-go-na-tsu*, or horse medicines, as which, it is said by some, to be much valued. The name is from *pûñ'-go*, horse, and *na'-tsu*, medicine.

Astragalus utahensis Torr. and Gray. Rattle-weed. *to'-sa-wu-da: to-sa*, white, + *wu'-da*, bear. *ti'-a-sa-ton-dzi.* The first of these names was doubtless suggested by the dense woolly covering of the plant and its legumes.

Atriplex canescens (Pursh) James. *dzi'-cûp.* Seeds eaten.

Atriplex confertifolia Watson. *suñ. su'-no. ? ka'-nûm-pi.* The seeds were formerly eaten, this and other species of Atriplex forming one of the most important sources of seed food. This and the related forms frequently occur in the region over great areas. The seeds were gathered like those of the grasses as described previously.

Atriplex truncata Torr. *a'-po.* Seeds gathered for food.

Avena sativa L. Oat. *o'-a-tûmp:* apparently from English oat + *-ûmp.*

Balsamorrhiza hookeri Nutt. *o'-a-kûmp* (*mo'-a-kûmp*). *a'-kĕn-dzĭp. wi'-a-kĕn-dzĭp.* Seeds gathered as food.

Balsamorrhiza sagittata Nutt. Arrowroot. *ku'-si-a-kĕn-dzĭp; ku'-si-ak. a'-kĕn-dzĭp.* This brilliantly flowered plant, which is abundant over the hills and mountain-sides throughout the territory of the Gosiute, was formerly of much economic importance to them. In the spring the large leaves and their petioles were boiled and eaten. Later when the seeds were ripe these were beaten out of the heads into baskets and used as food as in the case of those of Helianthus. The root was applied

as a remedy upon fresh wounds, being chewed or pounded up and used as a paste or salve upon the affected part.

Bark. *wa'-tsĭp.*

Beckmannia erucæformis Host. Slough Grass. *u'-gû-pi; u'-gûp.*

Berberis repens Lindl. Oregon Grape. *so'-ko-ri-ûmp: so'-ko-ri*, deer, + *-ûmp*, indicating food, etc. Hence "deer food."

Betula angustifolia Koch. *a'-tam-bĭ-tcûp. a'-tam-bĭ-tcĭp.*

Betula occidentalis Hook. Birch. *u'-di-ûp.*

Bigelovia douglasii Gray. Rabbit-brush; Rayless Golden-rod. *si'-bû-pi.* A chewing-gum was prepared from the roots of this plant, as previously described.

Bigelovia pulchella Gray. Rabbit-brush; Rayless Golden-rod. *ta'-bĭ-si-bû-pi. ta'-bĭ-si-pomp. ta'-bĭ-tci-pomp. ta'-bĭ-ci-pomp.* The first name is from *ta'-bĭ*, sun, + *si'-bû-pi*, name of *Bigelovia douglasii*, the preceding form which is regarded as the typical Bigelovia. The second is probably from *ta'-bĭ* + *pam'-pi*, head, etc.

Branch (shoot). *si'-ûñ-gûn. si'-a-ka.*

Brickelia grandiflora var. **minor** Gray(?). *? wa'-na-tsi-mu-gi.* Said by one informant that seeds were sometimes mixed in minor amounts with the meal made from seeds of other plants (grasses, etc.), and that it improved the cakes made from the latter, acting, it was said, like "baking powder." He said it had to be used with care to prevent poisonous effects. His statement was not confirmed by others. The roots furnished a medicine.

Brizopyrum spicatum Hooker. *ku'-so-nĭp.*

Bromus breviaristatus Thurb., etc. Brome Grass. *to'-bai-ba-bi. to'-pai-bi. to'-ho-bai-bi. to'-ho-bi. ti'-ba-bi.* Seeds formerly eaten.

Bryum sp. Moss. *so'-go-ba-gwĭp. so'-ko-ri-bo-ûmp.* In the first name *so-go* means earth. In the second *so'-ko-ri* means deer, the reference being to the eating of the moss by this animal.

Bud. *ĭ'-gi-si-a-ka:* from *ĭ'-gi*, present, initial; *si'-a-ka*, sprout, branch.

Calochortus nuttallii Torr. and Gray. Sego. *si'-go.* The common name for this attractive lily is taken from the Indian name. In the spring and early summer the bulbs of the sego were formerly much used as food by the Gosiute, constituting a standard source at that time of the year. The bulbs were also dried and preserved for winter use in the usual type of pit or "cellar."

Camassia esculenta Lindl. Camass. *? pa'-si-go.* As with the pre-

ceding form the bulbs of this plant were formerly a prized source of food and likewise were preserved for winter use. They were usually cooked by roasting in pits lined with hot stones.

Cardamine cordifolia Gray. Bitter Cress. *? mo'-a-gwa-nŭp.*

Carex hookeriana Dew. Sedge. *ai'-bi-baip.*

Carex jamesii Torr., **muricata,** etc. Sedge. *pa'-gi-gĭp.*

Carex utriculata Boott. Sedge. *pa'-gi-gĭp. pai'-gĭp. ai'-bi-baip: ai'-ba,* clay, + *pa,* water, *-ûp. ? pa'-da-wĭ-si-go-ûp.* Children sometimes eat lower tender stems and parts of the roots.

Carex sp. Sedge. *pa'-ra-wĕ-ci-gop.* Roots rarely used as medicine.

Carum carui. *tĭn'-ta. ? a'-pa.*

Carum gairdneri Benth. and Hook. *yam'-pa; yamp.* The fleshy roots of this plant furnished a food very important to the Gosiute and some related bands and one of which they were especially fond. The plant is widely distributed and occurs abundantly in the mountains. The roots were commonly prepared by roasting in a pit lined with hot stones. They were preserved in quantity for winter use.

Castilleja miniata Dougl. Indian Paint-brush; Painted-cup. *koi'-di-gĭp.* Also spoken of as a *to'-go-ûn-go-na;* but this name more frequently restricted to the next.

Castilleja parviflora Bong. and **minor** Gray. Indian Paint-brush; Painted-cup. *to'-go-ûn-go-na:* from *to'-go-a,* snake, rattlesnake, + *ûn* + *gun, gu'na,* fire, thus meaning "snake fire."

Catkin, pistillate of willows, etc. *bi'-a-gûnt.*

Catkin, staminate, of willows, etc. *ĭ'-djam-ûm-bu-i.*

Ceanothus velutinus Dougl. New Jersey Tea. *a'-di-rûm-bĭp-äñ-ka-sip. a'-di-rûm-bĭp.*

Cercocarpus ledifolius Nutt. Mountain Mahogany. *tu'-nam-pi. tu'-nûmp.* The wood of the mountain mahogany was the favorite material among the Gosiute for bows. Powdered charcoal made from the wood was used on burns by some.

Cercocarpus parvifolius Nutt. Mountain Mahogany. *tu'-hi-nûp.*

Chænactis douglasii Hook. and Arn. *wañ'-gĭn-gĭp. ko'-si-bo-qûn-tos.* Sometimes minced or mashed up and rubbed on limbs, etc., for soreness or aching.

Chamæbatiaria millefolium Maxim. *tĭñ'-go-ip. tiñ'-gwip.* Used as a remedy for gonorrhea.

Chenopodium capitatum Watson. Goose-foot; Pigweed. *kûm'-ûn-tsi-a. ? pa'-gwo-nûp.* Prob. *pa'-wa* + *gi* + *n* + *ûp.* Seeds extensively gathered for food, this species being the source of a large supply.

Chenopodium leptophyllum Nutt. Pigweed; Goose-foot. *i'-û-pi.* Seeds serving as food as with the preceding form.

Chenopodium rubrum L. and **capitatum** Watson. Pigweed; Goose-foot. *on'-tĭm-bi-wa-tsĭp: on'-tĭm-bi-wai: on'-ti-gait*, roan, etc. *kûm'-ûn-tsi-a.* Seeds eaten as with those of preceding species.

Chrysopsis villosa Nutt., etc. Golden Aster. *toi'-ya-dĭ-sas. toi'-dĭ-sas. ? tu'-go-wa-tsĭp.*

Cinna arundinacea var. **pendula** Gray. Rood Reed Grass. *to'-bai-ba-bi. to'-bai-bi.* Seeds gathered for food.

Citrullus vulgaris. Watermelon. *pa'-rĭ-ki-nûmp:pa*, water, + *dĭ-ka-kĭn*, to eat, + *nûmp.*

Claytonia caroliniana var. **sessilifolia** Torr. Spring-beauty. *dzi'-na.* Bulbs used as food. The same name is sometimes applied to the cultivated potato (vid. sub. Solanum).

Claytonia perfoliata Don. *pa'-gwo-dzûp.*

Clematis douglasii Hook. Clematis; Virgin's Bower. *o'-bĭn-da-ma-nûmp. a'-ra-si-mu?*

Clematis ligusticifolia Nutt. Clematis; Virgin's Bower. *o'-bĭn-da-ma-nûmp.* Furnished a medicine.

Cleome integrifolia Torr. and Gray. *a'-na-gwa-nûp. bĭ'-tci-gwa-nûp. bĭ'-dji-gwa-nûp.* Leaves pounded up in water and applied as a remedy to sore eyes.

Cleome lutea Hook. *si'-bo-i-ûp.* Occasionally spoken of under the same name as the preceding.

Cnicus drummondi Gray. Plumed Thistle. *tĭn'-tsĭñ-ga. tsĭ'-na. tsĭñ'-ga-bo-gop. tsĭñ'-ga. tsĭ'-na-bo-gûp.* Stems formerly eaten.

Cnicus eatoni Gray. Thistle. *po'-gwo; po'-go. ai'-wa-bo-gop* (*-gûp*); *ai'-gwa-bo-gop* (*-gûp*). Also loosely known under second name of the preceding and its variants. Used as a remedy on cuts and sores. Stems eaten. Apparently the thistle most used as food.

Cnicus undulatus Gray. Plumed Thistle. *pa'-bo-go. pa'-bo-gwo.* Also as *tsĭñ'-ga*, etc. Stems eaten.

Comandra pallida A. DC. Bastard Toad-flax. *tĭm'-bo-ip.*

Cornus stolonifera Michx. Kinnikinnick; Dogwood. *äñ'-ka-kwi-*

nûp. äñ'-ka-koi-nûp. Cf. Shoshoni *äñ'-ka-sib.* The inner bark of this plant, most commonly called kinnikinnick in the West, was formerly much smoked as a tobacco. It was commonly mixed with ordinary tobacco when the latter was procurable. The effect is described by one Gosiute as not a little like that of opium. The wood was also used in making snow-shoes. The name refers to the red color of the shoots.

Cone, of *Pinus. ti'-ba-ûn-gop.* The name is from *ti'-ba,* pine-nut, + *ûn,* possessive, + *gop,* pod or seed-vessel.

Cowania mexicana Don. Cliff Rose. *hĭ'-na-bi.* Leaves used as a medicine.

Cratægus oxycanthus. Thorn. *oi'-tcĭp.*

Cratægus rivularis Nutt. Haws. *wi'-ûm-pi; wi'-ûmp.*

Crepis glauca Torr. and Gray. *mu'-tci-gi; mu'-tci-gĭp; mo'-tci-gĭp; mo'-tcĭ-gi; mu'-ha-ti-bu-i.* Leaves said to have been eaten.

Crepis occidentalis Nutt. *mo'-a-mu-ĭ-tci-gĭp. mo'-a-mu-ĭ-tci-gi.*

Cymopterus longipes Watson. *an-dzûp'.* Cf. Shoshoni *tci-yan-dûp.* The leaves of this plant, so abundant and widespread in this region, formed a common article of food in the spring. They were prepared by boiling.

Cympoterus montanus Torr. and Gray. *tu'-na.* Seeds and underground parts eaten; but not the leaves as with the preceding form.

Cystopteris fragilis Bernh. *pa'-sa-gwûp. pa'-sa-gwĭp.*

Delphinium bicolor Nutt. and **menziesii** DC. Larkspur. *tu'-ku-ba-gûmp. pa'-ga-sau-wi-no-ûp.* Recognized as poisonous. The first name refers to the deep blue flowers (*tu'-kûm,* the sky, and hence, blue, etc.).

Deschampsia cæspitosa Beauv. var. Hair Grass. *toi'-ya-so-nĭp: toi'-ya-bi,* mountain, + *so'-nĭp,* grass. *toi'-ya-si-wûmp: toi'-ya-bi,* mountain, + *si'-wump,* q. v. Seeds eaten.

Deschampsia danthonioides Munro. Hair Grass. *mo'-no. ʔyo'-ni-so-nĭp.*

Deyeuxia canadensis Beauv. and **stricta** Trin. Reed Bent Grass. *añ'-go-ma-tai-yu; añ'-go-ma-tsai-yu: añ'-go-bi,* spruce, + *ma'-tsai-yu. ni'-a-bĭp. ni'-a-bi.*

Dodecatheon meadia L. Shooting Star. *pa'-hu-ip; pa'-bu-ip.*

Dracocephalum parviflorum Nutt. Dragon-head. *toi'-ya-ba-gwa-nûp: toi'-ya-bi,* mountain, or *toi'-ya-wĭnt,* canyon, + *pa'-gwa-nûp,* mint, which see further. The same also applied to the

related forms *Lophanthus urticifolius* and Scutellaria. Seeds of these forms were gathered as food.

Echinospermum redowskii Lehm., **floribundum** Lehm., etc. Stickseed. *tso'-nap.* This name was applied to various borraginaceous plants in about the same way as our popular name "stickseed."

Eleocharis palustris R. Br. Spike-rush. *wan'-dzi-baip.* By some occasionally loosely spoken of as *ba'-hwap*, correctly the name for Juncus.

Elymus canadensis L. Wild Rye. *o'-ro-rop; o'-ro; o'-do. ti'-wa-bi-nĭp.* Seeds formerly largely gathered for food.

Elymus sibiricus L. Wild Rye; Lyme Grass. *o'-ro-rop; o'-ro; o'-do.* By some also loosely spoken of as *ni'-a-bi*, q. v. Seeds used for food as with preceding.

Epilobium alpinum L. Willow-herb. *u'-sa.*

Epilobium coloratum Muhl. Willow-herb. *tu'-si-gĭp.* The name refers to the black seeds.

Epilobium spicatum L. Willow-herb. *pa'-ga-so-nap.*

Epipactis gigantea Dougl. *wan'-di-wa-sûmp. wan'-di-wa-sĭp.*

Equisetum hiemale L. Scouring Rush. *ĭ'-sa-yu-gĭp.* Name refers to use by Indian children for whistles.

Erigeron canadensis L. Fleabane. *? on'-tĭm-pi-wai. on'-tĭm-pi-wa-tsĭp.* Probably not correctly applied to this form, the name by nearly all being restricted to species of Chenopodium, q. v.

Erigeron glabellus Nutt. var. Fleabane. *tĭ'-sas; dĭ'-sas. toi'-ya-dĭ-sas. toi'-dĭ-sas. toi'-ya-da-ti-go-ra.*

Erigeron grandiflorus Hook. Fleabane. *ta'-kan-dĭ-di-a-gûp; ta'-kan-dĭ-dai-gûp: ta'-ka*, arrow, + *dĭ'-di-a-kĭn*, to kill, etc., + *gop, gûp*, snare, means of securing, etc. The root is said to have been used in the preparation of an arrow poison.

Erigeron leiomerus Gray. Fleabane. *tĭ'-sas; dĭ'-sas* (vid. E. glabellus). *pu'-i-dĭ-sas: pu'-i-bĭt*, blue, violet, etc., + *tĭ'-sas. ? toi'-ya-ta-son-dzi.*

Erigeron macranthus Nutt. Fleabane. *pa'-uñ-ga. kai'-si-na-bop. koi'-si-na-bop.* The word *mo'-a-gûp* is often applied in a general way to various fleabanes by some Indians.

Eriogonum brevicaule Nutt. *pu'-i-wa-nûp.*

Eriogonum cæspitosum Nutt. *tim'-bi-tĭm-bo-i-ûmp.*

Eriogonum cernuum Nutt. *oi'-tcu-mo; oi'-tcu-yo: oi'-tcu*, bird, + *mo'-a* (prob.), leg, given in reference to the peduncles which resemble slender bird legs. See also *E. inflatum.*

Eriogonum heracleoides Nutt. *bĭ'-tca-mu-kŭm. bĭ'-tca-mok.* Name refers to hand-like appearance of peduncles and rays. See also Peucedanum. *o'-a-pa-dza-ki.*

Eriogonum inflatum Torr. *oi'-tcu-mo; oi'-tcu-yo; oi'-tcu-o* (cf. E. cernuum, etc.). *? pi'-a-ga* (prob. not specific).

Eriogonum microthecum Nutt. and several others closely related. *sa'-na-kûn-da. sa'-na-kûnt. äñ'-ka-wa-dzûmp.*

Eriogonum ovalifolium Nutt. Silver Plant. *sa'-na-kûn-da; sa'-na-kûnt.* One of the *tĭm'-bai-na-tsu.* Also an eye medicine and used occasionally for "stomach ache."

Eriogonum umbellatum Torr. *sa'-na-kûn-da. sa'-na-kûnt. o'-a-pa-dza-ki* (cf. preceding forms).

Eriogonum villiflorum. *toi'-gûp-a-gûnt.* Said to have been used as an application in burns, but the author has not seen it so used.

Erodium cicutarium L'Her. Stork's Bill; Alfilaria. *yam'-pa-gwa-nûp.* The odor is something like that of yamp, hence the name.

Erythronium grandiflorum Pursh. Dog-tooth Violet. *toi'-ya-wĭt-ûm-ba-ga.*

Euphorbia montana Engelm., **dentata** Michx., etc. *mo'-a-ba-bu-ip. ?toi'-ya-ba-bu-ip.*

Eurotia lanata Moq. White Sage. *tci'-cop.* Used as a remedy in fevers, especially intermittents.

Ferula multifida Gray. *to'-dzûp.* The young shoots of this umbellifer were sometimes eaten but never the grown plant which was far too strong in taste. The roots furnished a remedy highly esteemed as an application on wounds and bruises. For this purpose the root is first sliced or minced and then thoroughly mashed to a pulp on a stone. It was then ready to be spread upon the affected part. The author saw it thus applied to an Indian's foot that had been crushed under the wheel of a wagon. For distemper in horses a remedy regarded as excellent among the Ute and also among the Gosiute was to burn the roots of this plant in a pan held beneath the nose of the sick horse so that the latter would inhale the smoke. The seeds were eaten to some extent.

Festuca tenella Willd. Fescue Grass. *si'-wûmp. yo'-ni-so-nĭp* (Goship. Cf. Glyceria). Seeds eaten.

Festuca ovina L. var. **brevifolia** Watson. Fescue Grass. *toi'-ya-si-wûmp. tĭ'-si-wûmp. yo'-ni-so-nĭp* (Goship. Cf. preceding form and Glyceria). Sometimes this and preceding form are mentioned as *to'-bai-bi* (see Poa). Seeds eaten.

Flower (general term). *hĭ′-bĭñ-gûp.*

Fragaria vesca L. Strawberry. *äñ′-ka-pa-ri-ûmp: äñ′-ka-bĭt,* red, + *pa-ri,* watery, referring to water, + *ûmp;* i. e., freely, "red water berry." Used as food in season.

Franseria hookeriana Gray (?). *pi′-a-tso-hwa.*

Fritillaria pudica Spreng. Buttercup; Yellow Bell. *wi′-na-go.* Bulbs to some extent formerly eaten.

Galium aparine L., var., and relatives. Bedstraw. Said to be one of the *pûñ′-go-na-tsu* or horse medicines, but no more specific name for the plant was recalled by informants tested. One stated that the plant was a good medicine for horses when "given out," but of such use the author has no information beyond this one statement.

Geranium fremontii Torr. Wild Geranium; Crane's Bill. *ka′-na-gwa-na. pa′-hu-ip.* Decoction made from root used for diarrhea, etc. The medicine is an active and efficient astringent. It may be remarked that a species of the same genus was formerly much used for similar purposes in our own medical practice, and that by some it was highly esteemed.

Geum macrophyllum Willd. *nĭn′-ûn-tsai.* Decoction from roots used as medicine.

Geum rossii Seringe. Said by one to be an *i′-a-na-tsu.*

Gilia aggregata Spreng., etc. *mu′-tu-nats-ûm-bĭ-dci.* The name means "humming-bird's milk" and was applied to several other forms (cf. Zauschneria).

Gilia gracilis Hook. and **linearis** Gray. *i′-am-bĭp:* probably *i′-a,* wound, + *m,* + *bĭp.* The plant is said to be mashed and applied on wounds and bruises.

Glaux maritima L. Sea-milkwort. *pa′-ru-sip. ? o′-ta-bi-da.*

Glyceria aquatica Smith. Reed Meadow Grass. *pa′-si-wûmp: pa,* water, + *si′-wûmp,* "water si′-wûmp," in reference to the habitat in wet ground and along streams. *kûm′-a-ra-tsi-yu-gĭp.* Seeds used as food.

Glyceria distans Wahl. Manna Grass. *si′-wûmp. yo′-ni-so-nĭp* (Goship). Cf. Festuca, to which also applied. Glyceria is apparently the primary or standard form. Seeds formerly an important source of food.

Glyceria nervata Trin. *si′-wûmp. tai′-gwi-bi.* Seeds as food.

Glycosma occidentalis Nutt. *? pa′-si-gwĭp. pi′-a-po-gop.* Cf. Osmorrhiza and Angelica, which are also called by the same name, the former probably being the *pa′-si-gwĭp* proper.

Gnaphalium sprengelii Hook. and Arn. Cudweed. *toi'-ya-da-ti-bu-da* (*-go-ra*). *nan'-te-bĭtc.*

Grass (general term). *so'-nĭp.*

Grayia polygaloides Hook. and Arn. Shad Scale. *kan'-gûm-pi. mo'-do-nŭp.*

Grindelia squarrosa Dunal. Gum Plant; Arnica. *mu'-ha-kûm.* Cf. use of term further under the word in Gosiute list. Cough medicine from roots among Ute and possibly among Gosiute, though the author has not been informed of such use nor has he seen the plant gathered for the purpose.

Gutierrezia euthamiæ Torr. and Gray. Torchweed; Rabbit-brush. *kû'-ki-koi-nûmp.*

Gymnolomia multiflora Benth. and Hook. *mo'-ta-qa. ĭ'-ca-mo-ta-qa: ĭ'-ca*, false, + *mo'-ta-qa.* Seeds formerly eaten.

Hedysarum mackenzii Richard. *pa'-sa-ton-dzĭp* (prob. *pa'-sa*, dry, + *ton'-tso*, clover, + *-ûp*). *pi'-o-ra: pi'-ûp*, large, long, + *o'-ra*, stem. By some also spoken of as *mo'-do-büc.*

Helenium autumnale L. Sneeze-weed. *tĭ'-da-ya-gûp; ti'-ya-gûp. mo'-ta-qa; mu'-ta-qa.*

Helenium hoopesii Gray. Sneeze-weed; Sneezewort. *tĭ'-da-ya-gûp; tĭ'-ya-gûp. toi'-ya-mo-ta-qa.*

Helianthella uniflora Torr. and Gray. *mu'-ha-kûmp; mo'-ha-kûmp. pi'-a-pa-ot''-qa: pi'-ûp*, large, + *pa-ot'-qa*, q. v.

Helianthus annuus L. Sunflower. *i'-ûm-pi.* The seeds of the sunflower formed a highly prized source of food and oil among the Gosiute. The seeds when ripe were beaten out of the heads into baskets by means of paddles or by means of the ordinary collecting baskets previously mentioned.

Heracleum lanatum Michx. Cow Parsnip. *ko'-no-gwĭp.*

Heuchera rubescens Torr. and related species. Alum-root. *wi'-gûn-dza. pa'-sa-wi-gûn-za.* The roots of this plant and closely related forms and species of Mitella used as a remedy for colic, etc., in babies and children. The properties of the roots are generally astringent. The preparation from the root is commonly spoken of as "*to'-sa-na-tsu*," meaning "white medicine," in reference to the color. It is used in the form of a tea or decoction. It is still constantly used and is highly valued.

Hieracium gracile scouleri Hook. and Hook. Hawkweed. *mû-tci-gĭp; mo'-tci-gĭp. mû'-tci-gi; mo'-tci-gi.*

Holodiscus discolor var. **dumosus** Maxim. *ku'-si-wup. tĭñ'-go-ip.*

Hordeum nodosum L. and **jubatum** L. Barley. *kwa'-tci-ûp. kan'-kwai-tcûp.*

Humulus lupulus L. Hops. *wa'-nûp. wa'-na-na-tso-mo-gi. u'-na-tso-mo-gi. bĭ'-tca-mok.*

Hydrophyllum occidentale Gray and **capitatum.** Waterleaf. *toi'-ya-ba-gwa-dzûp: toi'-ya-bi,* mountain, + *ba'-gwo-dzûp.*

Hypnum sp. Moss. *pa'-oñ-gûp.* Cf. Polytrichum.

Iva axillaris Pursh. *tu'-ro-sip: tu'-o-bĭt, tu'-ro-vi,* black, + *sip,* sap, juice, + *ûp.* The same name includes also Ambrosia, q. v.

Iva xanthiifolia Nutt. *tu'-ro-sip. ?kûm'-ûn-tsi-a.* Used by a few but doubtless incorrectly. See Chenopodium.

Ivesia gordoni Torr. and Gray. *?toi'-ya-wañ-go-gĭp.*

Jamesia americana Torr. and Gray. *toi'-ya-bĭn-da-tsĭp. toi'-ya-da-tsĭp.* One of a number of mountain plants known under this general designation.

Juncus balticus Deth. Bog-rush. *pa'-hwap. pa'-ûm-ûp. pa-ma-wûp.*

Juncus bufonius L. Bog-rush. *pai'-yo-nĭp.*

Juncus parryi Engelm. Bog-rush. *tĭm'-pĭn-pa-gi-gĭp. pa'-hwap,* etc. (cf. *J. balticus*).

Juniperus californica var. **utahensis,** etc. Cedar; Juniper. *wa'-pi; wap.* The full name, as frequently heard among the Shoshoni, is *wa'-ap-o-pi,* and clearly means fire, match or kindling wood. In the Gosiute and most related dialects the *o'-pi,* wood, is not heard, the form being variously, *wap, wa'-pi,* and *wai'-ap* (cf. Gosiute *wai'-hĭn,* to burn). One of the most familiar of arborescent plants in the Gosiute territory, occurring widely over the foot-hills and mountains. It furnished the wood most commonly used in the construction of winter lodges, the bark (*i'-na-wa-tsĭp*) being used for thatching and occasionally as a covering on the floor, though smaller branches and especially grasses were commonly applied to the latter purpose. The bark was also used to line and cover the pits in which dried fruits, etc., were stored. The leaves furnished a favorite medicine for coughs and colds, being used in the form of a tea. It is still much in use for this purpose. The cedar-berries, known as *wap'-ûm-pi,* were sometimes eaten in fall and winter after proper boiling.

Juniperus communis var. **alpina.** *wa'-pi. añ'-go-gwa-nûp:* prob. *añ'-go-bi,* spruce, + *gwa'-nûp,* odor, scent, or referring to such.

Juniperus scopulorum Sarg. Red Cedar. *pa'-wa-pi.*

Kalmia glauca Ait. American Laurel. *tĭm'-pĭn-tu-nûmp: tĭm'-pi*, rock, + *n* + *tu'-nûmp*, mahogany. One of the plants spoken of under the general designation *tĭm'-bo-ip*. The leaves were by some used as medicine.

Krynitzkia fulvocanescens Gray. *ku'-si-ya-ni-gûnt: ku'-tsĭp*, ashes, in reference to the dense gray pubescence, + *ya-ni-gûnt*.

Lactuca leucophæa Gray. Lettuce. *mu'-tci-gĭp; mu'-tci-gi. pa-ot'-qa*. The second occasionally heard, but incorrect.

Lactuca ludoviciana DC. Lettuce. *mu'-tci-gĭp; mu'-tci-gi. ? bĭ'-tci-gwa-nûp*. The leaves of the various species of Lactuca were eaten.

Lathyrus ornatus Nutt. Everlasting Pea. *mu'-da-bĭs*. Also known under the general names of *pi'-o-ra*, referring to the stem, and *na'-da-pa-ra-na-gĭnt*, in the restricted usage applied properly to Astragalus, referring to the pod.

Layia glandulosa Hook. and Arn. *mo'-ta-qa; mu'-ta-qa*. Applied also to several other related forms. Vid. sub *mo'-ta-qa*.

Leaf. *sĭ'-gi*.

Lemna. Duckweed. *wa'-da-bu-ĭp. pai'-ya-bo-sip*.

Lepidium medium Greene. Peppergrass. *wu'-bu-i-nûp*. The same name was also applied to several other forms of the same family with about the same flexibility as our popular name "peppergrass." Cf. Draba.

Lewisia rediviva Pursh. *ka'-na*.

Lichen (general term). *tĭm'-pĭn-so-kûp*.

Linum kingii Watson. Flax. *na'-na-rĭp. ? tĭm-pi-sa-wap*.

Linum lewisii Pursh. Applied as a remedy to bruises, etc. Said to take down swelling, etc. Cf. use of flax-seed meal.

Lithospermum hirtum Lehm. Gromwell. *äñ'-ka-tso-nap; äñ'-ka-tso-ni-baip: äñ'-ka-bĭt*, red, + *tso'-nap* or *tso'-ni-baip* (cf. next forms), the reference probably being to the deep orange color of the corollas.

Lithospermum pilosum Nutt. and **multiflorum** Torr. Gromwell; Stickseed. *tso'-ni-baip. tsom'-ba. tso'-nap*. (From *tso'-mo*, *tso*, hook, etc., + *ba*, seed, + *-ûp* or *-ĭp*, the reference being to the bur-like fruit.) Cf. our popular name "stickseed," which corresponds in a general way to the Indian word. The seeds were formerly eaten. The roots formed a valued remedy in kidney troubles (diuretic).

Lonicera utahensis Watson and **involucrata** Banks. Woodbine;

Honeysuckle. *pi'-a-ra-dûm-bĭp. pi'-a-da-rûm-bĭp. pa'-ri-a-ûn-dĭk-ûp: pa'-ri-a*, elk, + *ûn* + *dĭ-kûp;* i. e., "elk's food." Cf. the Ute *te'-ĕd-kav.* These plants are also very often spoken of under the name *wu'-da-ûn-dĭ-kûp*, "bear's food," because the berries are said to be sought for food by the bear. Cf. the name "bear-berry" applied by people of Montana, etc., to species of Lonicera.

Lophanthus urticifolius Benth. *toi'-ya-ba-gwa-nûp: toi'-ya-bi*, mountain, + *pa'-gwa-nûp*, mint (Mentha), the reference being to habitat. Cf. Dracocephalum and Scutellaria, etc., to which forms the same name applies. The seeds were formerly extensively gathered for use like those of grasses and chenopods.

Lupinus leucophyllus Dougl., **parviflorus** Nutt., etc. Lupine. *kwi'-ta-kwa-nûp* (prob. *kwi'-tûp*, excrement, + *kwa'-nûp*, odor).

Lycopodium. *pam'-bu-i-ûp.*

Lycopus sinuatus Ell. Water Horehound. *nĭ'-di-ba; nĭ'-dĭb.* Occasionally heard as *ba'-gwa-nûp* or *pa'-gwa-nûp*, the name of the mint (Mentha).

Lygodesmia grandiflora Torr. and Gray. Said to be one of the horse medicines, *pûñ'-go-na-tsu.*

Madia glomerata Hook. Tarweed. *nan'-tai-bĭtc; nan'-te-bĭtc.*

Malvastrum coccineum Gray. False Mallow. *pa'-sa-koi-no-komp. koi'-no-komp.* Cf. the following species.

Malvastrum munroanum Gray. *koi'-na-komp. koi'-ya-kûmp.* This and the preceding form were formerly pounded up in water to form a mucilage or gummy paste (*wi'-nau-tsaug*) which was applied over the rough inner surfaces of earthen dishes, such as bowls (*wi'-nau*). The mucilage filled up the small holes, etc., and hardening left a smooth, glaze-like surface. This *wi'-nau-tsaug* (bowl "filler") was also sometimes used on wicker vessels after the latter had first been "pitched" with pine gum.

Mammillaria sp. Cactus. *mu'-tsa.* After removal of the outer portion the inner was often used as food.

Matricaria discoidea DC. May-apple. One of the "*tĭ'-sas.*"

Melica poæoides Nutt. Melic Grass. *wa'-bi.*

Medicago sativa L. Lucern; Alfalfa. *pu'-i-dĭ-kûp.* The name means simply "green feed."

Mentha canadensis L. Mint. *pa'-gwa-nûp: pa*, water, in reference to habitat, + *gwa'-nûp*, in reference to the sweet odor (odor of pennyroyal). *pa'-na-tĭ-so.* From the leaves of this plant a

beverage was formerly prepared and used by many much as they now use tea.

Mentzelia albicaulis Dougl., **multiflora** Gray, and **pumila** Torr. and Gray. *ku'-hwa.* Seeds said to have been used to some extent as a remedy on burns (*wai'-a-na-tsu*).

Mentzelia lævicaulis Torr. and Gray. *pi'-a-ku-hwa.* Cf. the preceding.

Mertensia alpina Don. Lungwort. *toi'-ya-mo-ta-komp.*

Microseris sp. *koi'-nûmp.*

Mitella trifida Graham. Mitre-wort. *pi'-a-näñk. to'-sa-na-tsu.* The roots of Mitella and Heuchera were gathered as a medicine for colic, etc., in babies. It was given in the form of a tea and was and still is much valued. The color of the dried roots gave the name *to'-sa-na-tsa*, "white medicine," to the preparation and occasionally to the plant itself.

Monolepis chenopodioides Moq. *kûm'-ûn-tsi-a.* Cf. Chenopodium.

Nasturtium palustre DC., etc. Water-cress. *si'-bo-i-ûmp. ? pa'-mu.* Eaten.

Negundo aceroides Moench. Box-elder. *gu'-su-wup.*

Staminate flowers of. *ku'-ni-ûp.*

Pistillate flowers of; samara of. *näñ'-ki-tco: näñk*, ear, and probably *tso'-mo, tco*, beads, etc.

Nicotiana attenuata Torr. Tobacco. *pu'-i-ba-u.* This was the source of tobacco largely used by the Gosiute, the leaves being dried in the usual way and used either alone or mixed with the inner bark of kinnikinick (see under Cornus).

Œnothera biennis L. Evening Primrose. *tsĭ'-gi-tûmp.* Seeds said to have been eaten occasionally.

Œnothera cæspitosa Nutt. Evening Primrose. *ka'-na-gwa-na.* Roots used as a medicine.

Opuntia rutila Nutt., **polyacantha** Haw., etc. Cactus, Prickly Pear. *ai'-gwo-bi.* Formerly used as food, the spines being removed and the joints roasted in hot coals.

Orogenia linearifolia Watson. *kwi'-ta-po-ni. kwi'-ta-po.* Indians say bears sometimes dig up and eat the bulbs of this plant.

Orthocarpus linearifolius Benth. *ta'-bi-wûmp. pi'-a-ta-bi-wûmp.*

Oryzopsis cuspidata Benth. Mountain Rice. *wai.* A valuable bunch-grass very common in Nevada and Utah which formerly furnished an abundance of seeds or grain to the Gosiute.

Osmorrhiza nuda Torr. Sweet Cicely. *pa'-si-gwĭp. ? pa'-si-go-ŭp; pa'-si-go.* Cf. also the related Glycosma and also Angelica.

Oxyria digyna Hill. Mountain Sorrel. *äñ'-ka-si-yu-na.*

Pachystima myrsinites Raf. Box. *ta'-tsĭp.*

Parnassia fimbriata Banks. Grass of Parnassus. *tĭm'-bi-wi-gûn-dza; tĭm'-bi-wi-gûn-ta.* One of the *tĭm'-bai-na-tsu.*

Parnassia parviflora DC. Grass of Parnassus. *koi'-gwa-nûp. toi'-ya-gwa-nûp.* Cf. *Saxifraga nivalis*, a related form.

Pentstemon confertus Dougl. var. Beard-tongue. *tu'-go-wi-nûp.*

Petiole. *o'-ra.*

Peucedanum graveolens Watson, **kingii**, etc. *i'-djaip.* The roots of several species of Peucedanum formed one of the most valued medicines among the Gosiute, being, in fact, termed by them *pi'-a-na-tsu*, or "great medicine." In "sore throats" it was mashed and applied directly to the affected surface. In cases of biliousness and severe colds it was sometimes used as a decoction, being by some mixed with a *koi'-na-tsu* and pine resin.

Peucedanum simplex Nutt. *bĭ'-tca-mu-kûm.* The name applied strictly to a species of Eriogonum; but also used in a more general sense to indicate several other plants, like the present one, which have long peduncles bearing rays suggestive of fingers radiating from a hand.

Phacelia menziesii Torr. and **circinata** Jacq. *wu'-sĭ-bĭñ-gûnt. wu'-si-gûnt.* The name refers to the clothing of hispid hairs on stems and leaves of these plants.

Phalaris arundinacea L. Canary Grass. *o'-gwĭp. o'-gĭp.* Cf. also Beckmannia, to which the name primarily belongs. Phalaris is regarded as the "little brother" of Beckmannia.

Phleum alpinum L. Cat's-tail Grass; Mountain Herd's Grass *tĭ'-so-nĭp.* Cf. Alopecurus, which is also included under the name.

Phlox longifolia Nutt. Sweet William; Phlox. *si'-bi.*

Phoradendron juniperinum Engelm. Mistletoe. *o'-ka.*

Phragmites communis Trin. Reed. *paij; paidj.* This tall reed is found in abundance in some places along streams and about ponds and is common along the shores of Utah Lake. A sweet secretion or honey-dew formed on the leaves by aphides was formerly gathered by the Indians and used as a sugar (*u'-ga-pi-na*). The same was true of similar secretions formed on the leaves of the cotton-wood and other plants. In pioneer days in Utah the Mormons also gathered this secretion to some extent.

Pinus monophylla Torr. and Frem. Nut Pine. *ti'-ba-wa-ra.* The nuts (*ti'-ba*) from this tree formed one of the important foods of the Gosiute; and the invariable journey into the mountains each fall for the pine-nut harvest is still looked upon as a great fixed event of the year. In the pine-nut season at this time the Indians go chiefly to the Deep Creek mountains.

Pinus edulis Engelm. Piñon Pine; Nut Pine. *ai'-go-û-pi.* When this species was accessible the nuts were gathered and used like those of the preceding species.

Plant (general term). *si'-a-ka. pu'-i-si-a-ka.*

Plantago eriopoda Torr., **patagonica** Jacq., **major** L., etc. Plantain. *toi'-gû-pa-gûnt.* The name refers to the elevated head of the flowers (*toi*, indicating elevation, etc., + *gûp*, fruit, + *a*, connective, + *gûnt*). The same name is sometimes applied to Ranunculus for the same reason.

Poa californica Munro. Meadow Grass. *tĭn'-ä-bĭp. ni'-a-bĭp; ni'-a-bi.* Seeds eaten.

Poa tenuifolia Nutt. "Bunch Grass"; Meadow Grass. *ni'-a-ba-so-nĭp; mi'-a-ba-so-nĭp. ni'-a-bĭp.* Cf. the preceding. The seeds of this abundant "bunch grass," notwithstanding their small size, were an important source of grain to the Gosiute.

Poa pratensis L. Blue Grass; Meadow Grass. *ni'-a-bĭp. añ'-go-mû-tsai-yu.* The latter name commonly applied also to Deyeuxia, and apparently more narrowly restricted to the latter. Species of Deyeuxia are also often spoken of as *ni'-a-bĭp*, the forms of the two genera not being sharply distinguished by them as is only natural. Their names, like our own popular ones, often included species which, scientifically studied, botanists place in separate genera; while in other cases their distinctions were very close.

Polemonium cæruleum L. Greek Valerian. *ĭ'-ca-ûn-toi-nûmp.* The name refers to the fact that the wolf (*ĭ'-ca*) is said to eat the berries of the plant sometimes when sick.

Polygonum amphibium L. *pi'-a-pa-oñ-gop-pai-dja-rûmp: pi-ûp*, large, + *pa'-oñ-gop*, moss, water-weed, + *pai'-dja-rûmp.*

Polygonum erectum L. *äñ'-ka-pa-bu-ip. äñ'-ka-pu-i.*

Polygonum hartwrightii Gray. *pa'-gu-ĭp. ta'-kûm-bu-i.*

Polygonum imbricatum Nutt. *ko'-ka-bi; ko'-ga-bi.*

Polygonum viviparum L. *? toi'-ya-da-ti-bu-da.*

Polytrichum juniperinum. Moss. *tĭm'-pĭn-pa-bo-i-ûp. pa'-oñ-gop; pi'-a-pa-oñ-gop.* Cf. Hypnum.

Populus angustifolia James. Cottonwood. *so'-o-pi; so'-ho-bi.* The shoots of the cottonwood furnished the material for much of the basket work among the Gosiute. Because of greater strength it was preferred to the willows. The honey-dew formed by aphides on the leaves was gathered and used somewhat as sugar.

Populus tremuloides Michx. Quaking Aspen. *sĭñ'-gû-pi; sĭñ'-gûp.*

Potentilla anserina L. Five Finger. *? so'-ko-bai-gûn-ĭp-wa.*

Potentilla fruticosa L. *wa'-tsi-gûnt. wa'-na-gûnt.*

Potentilla glandulosa Lindl. Five Finger. *pa'-sa-wi-gûmp.* Roots used as medicine. Said to be applied as poultice to swollen parts, and also to be used internally.

Potentilla pennsylvanica L. Five Finger. *ku'-si-wañ-go-gĭp. ku'-tsa-ga-ti-wo-ra-rat.*

Potentilla plattensis Nutt. Five Finger. *ĭ'-ca-ro-dzûp: ĭ'-ca*, wolf, + *to'-dzûp*, q. v.

Primula parryi Gray. Primrose. *? pu'-i-pa-si-go. ? toi'-ya-da-ti-bu-da; toi'-ya-na-ti-bu-da.*

Prunus demissa Walpers. Choke Cherry; Wild Cherry. *to'-o-nûmp. toñ'-gi-cip.* The fruit was used as food. For winter use after gathering it was mashed and spread out in layers to dry in the sun. It was then cached like that of the service-berry previously described. For use, the common method was to grind up the dried fruit, boil in water, and to eat as a sort of mush.

A decoction from the bark was used as a "blood medicine," *bu'-i-na-tsu*, in cases where a person was affected with frequent hemorrhages at the nose, etc.; or, according to the Gosiute explanation, when the person "has too much blood." The bark was also used as an *ilai'-na-tsu* for babies and children.

Pseudotsuga douglasii Carr. Douglas Spruce. *añ'-go-bi. wañ'-go-bi; wañ'-go.*

Purshia tridentata DC. *hĭ'-na-bi.* Cf. Cowania, from which the name is extended by many to the present form.

Pyrus sambucifolia Cham. and Schlecht. *?ku'-no-gĭp.* This is properly the name of the Elder (Sambucus) and it is doubtful whether the name is properly applied to the present form which in general appearance resembles it, and hence its specific name. It was heard applied to this form but once.

Quercus undulata Torr., var. Scrub Oak; Rocky Mountain Oak.

ku'-ni-ûp. kwi'-ni-ûp. The acorns (*ku'-ni-ro-ûmp*) were prepared for food in season; but they were not preserved for winter use.

Ranunculus aquatilis L. var. *mo'-a-pa-oñ-gop: mo'-a* + *pa'-oñ-gop*, moss, etc. *? pa'-mo.* Entire plant said to have been sometimes eaten, after boiling, which removed the acrid principle.

Ranunculus cymbalaria Pursh. Buttercup; Crowfoot. *ni'-u-ru-pam-pi. toi'-gû-pa-gûnt.* The names refer to the elevated, cone-shaped heads (*toi*, elevate, etc., + *gûp*, fruit, + *gûnt*). The names are not wholly specific, being applied to some other forms having similar heads.

Ranunculus sceleratus L. Buttercup. *a'-tam-bi-tcĭp; ha'-tam-bi-tcĭp.*

Rhus trilobata Nutt. Sumac; Squaw-berry. *ai'-tcĭb; i'-tcĭb. u'-i-tcĭb.* Berries eaten to some extent.

Rhus glabra L. Sumac; Squaw-berry. *äñ'-ka-ti-wi-ûmp. äñ'-ka-ti-wi-a.* Berries eaten. The leaves were formerly smoked.

Rhus toxicodendron L. Poison Oak; Poison Ivy. *ta'-da-bi.*

Ribes aureum Pursh. Missouri or Black Currant. *kai'-i-ûmp. po'-go-nûp; po'-gûm-pi.* The second name, while often used as applying to this species, is also the general term for the currant berry of this and other species, in this usage being nearly the equivalent of our word currant. The fruit of this and the following species, which seem to have been less important, was used as food and was dried in quantity and preserved for winter in the usual way.

Ribes divaricatum Dougl. var. Currant. *wĭ'-sa-po-go-nûp. wĭ'-sa-po-gûmp.* The prefixed portion of the name, *wĭ'-sa*, refers to the prickles borne on this species.

Ribes lacustre Poir and **leptanthum** Gray var. **brachyanthum.** Currant. *ai'-go-po-gûmp.* The prefixed or first portion of this compound name means process or thorn, in reference doubtless to the spines of this species.

Ribes oxyacanthoides L. Currant. *toi'-ya-po-go-nûp.* The name means "mountain currant."

Root. *tsĭn; tsĭn'-a.*

Rosa californica and **fendleri** Crepin. Rose. *tsi'-o-pi.* The name means "prickle plant." The berries, known as *tsi'-ûmp* or *dzi'-ûmp*, were gathered for food.

Rosa nutkana Presl. Rose. *ti'-a-bi.* The berries are spoken of as *mo'-gon-dzi-ûmp*, which means poison or deleterious rose-berries, these berries not being regarded as good to eat.

Rubus leucodermis Dougl. Raspberry. *tu'-kwûn-dau-wi-a. tu'-kwûn-da-mi.* Berries eaten.

Rubus nutkanus Moçino. Salmon-berry. *tu'-kwûn-dau-wi-a. wu'-da-ûn-dĭ-kûp.* The second name refers to the fact that the berries are sought for food by the bear. The same name is also given to a species of Lonicera, q. v. Berries eaten.

Rudbeckia occidentalis Nutt. Coneflower. *tu'-ro-vi-pam-pi. tu'-ro-pam-pi. tu'-pam-pi.* The names mean simply "black-head," in reference to the color of the cone-shaped flower heads.

Rumex salicifolius Weinman, etc. Sorrel; Dock. *äñ'-ka-pa-dja-rûmp; äñ'-ka-pai-dja-rûmp. äñ'-ka-pa-tsa-rûmp.* The root furnishes one of the remedies spoken of by the Gosiute as "blood medicines" (*bu'-i-na-tsu*). A decoction of the root is also said to have been used for injection by the rectum in cases of severe constipation.

Sagittaria variabilis Engelm. Arrow-head. *pa'-bo-bu-ĭp; pa'-ba-bu-ĭp. pa'-bu-ip. pi'-a-pa-bo-bu-ĭp.*

Salicornia herbacea L. Samphire; Glasswort. *pa'-o-ka; pa'-ho-qa. o'-ka.* Very abundant in many places in Gosiute territory about alkaline and brackish water or over damp alkaline areas. This is one of the various chenopodiaceous plants that contributed seeds so abundantly to these Indians. When the meal from the seeds of this plant was cooked it is described as having tasted like "sweet bread" by those who have eaten it.

Salix longifolia Muhl., and other species. Willow. *si'-o-pi; si'-hĭp.* The name seems to mean approximately "water or wet wood or plant (shrub or tree)," probably in reference to its habitat. The wood was commonly used in the manufacture of baskets, water-jugs, etc., though cottonwood was by most preferred where accessible. It was used for making fish-weirs (*pan'-gwi-go-ûp*), and for other purposes.

Salix amygdaloides Anders., **lasiandra** Benth., var., and **flavescens** Nutt. Willow. *sa'-gû-pi.* Also in a general way designated by the name *si'-o-pi*, as for the preceding, which is used largely in a generic sense. Used like those of the preceding.

Samara of Negundo and Acer. *näñ'-ki-tco; näñ'-ki-tso. ka'-bĭp.*

Sambucus glauca Nutt. Elder. *pa'-go-no-gwĭp; pa'-go-no-gĭp.* Bears eat the berries of this form.

Sambucus racemosa L. Elder. *ku'-no-gĭp; ku'-no-gi. ko'-no-gĭp; ko'-no-gi.* The fruit was eaten in season.

Sap. *büc.*

Saponaria vaccaria L. Soapwort. *sai'-ya-hyu-gĭn.* Long ago introduced into Nevada and Utah through early emigrant travel.

Sarcobatus vermiculatus Torr. Greasewood.

Saxifraga nivalis L. Saxifrage. *toi'-ya-gwa-nûp. ku'-i-gwa-nûp.* (Prob. *toi'-ya-bi*, mountain, + *gwa'-na*, odor, perfume, + *ûp*).

Saxifraga punctata L. Saxifrage. *pa'-sa-wi-gûn-za.* Cf. Heuchera.

Scirpus lacustris L. var. **occidentalis** Watson. Bulrush; Tule. *saip.* The lower, tender portions of the stems were formerly eaten as food.

Scirpus maritimus L. Sea Bulrush. *ai'-bi-baip. saip* (occasional). Cf. *Carex hookeriana* and *utriculata* which are often grouped under the same name.

Scutellaria. Skullcap. *toi'-ya-ba-gwa-nûp.* Seeds eaten. Cf. Dracocephalum and Lophanthus.

Sedum debile, etc. Stone-crop. *oi'-tcûn-goi-djok, ?äñ'-ka-ti-wi-a.* ?Leaves formerly smoked. The plant was ranked with the kinnikinnick because of this use.

Seed. *ba.*

Seedling. *ĭ'-gi-na-ga.* (This name is from *ĭ'-gĭn*, meaning immediate, beginning or initial, and *a'-ka*, plant.)

Senecio, several species. Groundsel. *tĭm'-pi-dza-na-kwo.* The name means "a mouth rubber or gum," the equivalent of our "chewing-gum," a chewing-gum having been prepared formerly from the latex.

Shepherdia argentea Nutt. Buffalo-berry. *äñ'-ka-mo-do-nûp. äñ'-gû-ta-gûp. añ'-gûp. o'-pĭp.* These names refer to the scarlet berries. Berries eaten.

Shepherdia canadensis Nutt. Buffalo-berry. *a'-da-rûm-bĭp. pi'-a-da-rûm-bĭp.* Cf. Ceanothus, *a'-di-rûm-bĭp-äñ-ka-sip.*

Sidalcea malvæflora Gray. *mu'-tsai-kûmp. mĭ'-ta-kûmp; mĭ'-ta-komp.*

Silene acaulis L. Catchfly. *tĭm'-pi-sa-gwûp. wa'-si-pĭt.* Said to have been used for colic, etc., in children, being a *koi'-na-tsu.*

Silene antirrhina L. Catchfly. *oi'-tcu-yo.*

Silene menziesii Hook. Catchfly. *yo'-go-ti-wi-ya.* Leaves formerly smoked as a tobacco, being dried and powdered for this purpose.

Silene multicaulis Nutt. and **scouleri** Hook. Catchfly. In cases of "pain in stomach," this plant was sometimes used as an emetic. The method of use was to pound up, put into warm water, and drink. It was also used as a horse medicine, or *pûñ'-go-na-tsu.*

Sisymbrium canescens Nutt. Hedge Mustard. *poi'-ya. po'-nak.* Seeds were gathered and used for food, being made into a kind of mush that was much liked.

Sium cicutifolium Gmelin. Water Parsnip. *pa'-o-tĭm-bĭtc. ? toi'-ya-ro-dzĭp.*

Smilacina amplexicaulis Nutt. False Solomon's Seal. *ĭ'-djû-pain-po-go-nûp: i'-djû-pa*, coyote, + *n*, + *po'-go-nûp*, berry. *ĭ'-ca-bo-gûp: ĭ'-ca*, wolf, + *po'-gûp*, *po'-go-nûp*, berry. Cf. the Ute name for this plant, *yo'-go-ta-ma-nûmp.* Berries said to be eaten by the bear and hence the plant is designated as one of a number known under the name *wu'-da-ûn-di-kûp*, "bear food plant." It is also known from a legendary reference as *pûn'-go-ûn-da-mi* (*pûñ'-go*, horse, + *ûn*, + *da'-mi*).

Smilacina stellata Desf. False Solomon's Seal. *pai'-ya.* Roots pounded up and rubbed on limbs in cases of rheumatism. Bears said to eat berries as with the preceding species.

Solanum tuberosum L. Potato. *go'-tsa-wĭn.* Sometimes spoken of also as *dzi'-na*, the name primarily applied to the Spring-beauty, the bulbs of which were eaten. The potato is cultivated to some extent by the Gosiute.

Solidago canadensis L., **nemoralis** Ait., **spectabilis** Gray., etc. Goldenrod. *oi'-yĭñk; o'-a-yĭñk: o'-a-bĭt*, yellow, + *yĭñk.* Seeds to some extent gathered and eaten.

Sonchus asper Vill. Sow-thistle. *mu'-tci-gĭp; mo'-tci-gĭp. mu'-tci-gi; mo'-tci-gi.* An introduced plant designated by the name applied to the closely allied native species of Latuca, q. v.

Spartina gracilis Trin. Salt Grass. *na'-da-pu-gu-ĭ-gi. na'-da-pu-gai-gi.*

Sphæralcea rivularis Torr. *koi'-na-komp. pĭ'-tca-gwa-nûp. toi'-na-ko-nĭp.* Cf. Malvastrum.

Sphæralcea emoryi Torr. *koi'-no-komp; koi'-na-komp. pi'-a-koi-na-komp.* Cf. Malvastrum. This genus in general characteristics is extremely similar to Malvastrum and it is only natural that popularly and by the Indians no wide differences in designation are present.

Spiræa cæspitosa Nutt. Meadow-sweet. *tĭm'-pĭn-tĭm-bo-ûmp. tĭm'-bo-ûmp. tĭm'-bi-ma.* While the leaves are used as a bowel medicine it is mostly employed as a remedy for burns. For this the roots are used. These are first freed from dirt and epidermis and then boiled to a pulp which is applied as a salve

to the burned portion, as is described in the earlier portion of this paper. The remedy is highly valued and to the author has seemed efficacious in cases observed.

Spiranthes romanzoffiana Cham. Ladies' Tresses. *sai'-gi-tamp.* Used as a medicine in venereal disease, a *tim'-bai-na-tsu.*

Stachys palustris L. Woundwort. *toi'-ya-ba-gwa-nûp. pi'-a-ba-gwa-nŭp.* Seeds gathered for food along with those of Lophanthus, Scutellaria, etc., closely related forms known under the same name.

Stalk, stem. *o'-ra.*

Stephanomeria exigua Nutt. *mo'-a-gûp.*

Stipa comata Trin. and Rupr. Feather Grass. *dai'-gwi-wĭq. o'-gwĭp; o'-gĭp.*

Stipa speciosa. Feather Grass. *o'-gwĭp; o'-gĭp. yu'-gwĭp.* Cf. Aristida, a genus very close to the present one.

Stipa viridula Trin. Feather Grass. *pa'-si-wu-mûts; pa'-si-wu. o'-gwĭp; o'-gĭp.*

Suaeda depressa Watson. Sea-blite. *wa'-da.* Seeds were much liked as food.

Taraxacum officinale Weber. Dandelion. *ti'-bo-hi; ti'-bu-i. mu'-tci-gĭp; mu'-tci-gi; mu'-tca-gi-a.* Cf. Crepis.

Tetradymia canescens DC. var. **inermis** Gray. *si'-bû-pi.* Cf. Bigelovia.

Townsendia sericea Hook. var., etc. *mu'-tsĕm-bi-a-dĭ-kûp.* The name means literally "mountainsheep food" (*muts'-em-bi-a*, mountainsheep, + *di'-kûp*), a name referring to its serving as food for the mountainsheep. It is not specific.

Trifolium, various species. Clover. *tan'-tso.*

Triglochin maritimum L. Arrow-grass. *pa'-na-wi.* Mentioned also as one of the various *pûñ'-go-ûn-da-mi.* Seeds eaten.

Trisetum subspicatum Beauv. *wi'-tcûb.* Also sometimes more generally as *ni'-a-bĭp.* Seeds eaten.

Troximon aurantiacum Hook. *mu'-tci-gĭp; mu'-tci-gi-a.* Leaves sometimes eaten.

Troximon sp. *? koi'-nûmp.* See Microseris.

Typha latifolia L. Cat-tail. *to'-ĭmp.* Seeds eaten. The bristles of the ripe spikes were burned off, the seeds becoming roasted or partially so in the process. The seeds were then freed and dealt with as usual.

Urtica holosericea Nutt. Nettle. *tĭn'-ai-gop.* The name refers to the stinging hairs or nettles.

Urtica sp.? *tu'-i.*

Vaccinium cæspitosum Michx. Bilberry; Blue-berry. *tĭ'-da-kai-mi-ya. tĭ'-mai-hya.* Leaves formerly dried and used as a tobacco. Hence, grouped with kinnikinnick (Cornus).

Valerianella congesta DC. *a'-pa.*

Valeriana edulis Nutt. *toi'-ya-bĭ-tûm-ba-ga. toi'-ya-bĭ-tûm-ba.* Roots pounded up and rubbed on externally for rheumatism. Said also to be good on swollen and bruised parts (*bai'-gwi-na-tsu*). Seeds eaten.

Valeriana sylvatica Banks. *ku'-yi-gwa-nûp; ku'-i.* Said to kill horses. An arrow poison is said to have been prepared from the root.

Veratrum californicum Durand. False Hellebore. *ĭ'-ca-bo-go-nûp.* The name may be rendered "wolf currant."

Vicia americana Muhl. Vetch. *ûp'-ta-wu-kwa-dju-nĭñ.*

Viola cucullata Ait. Violet. *? pa'-bu-ĭp.* Name not specific.

Viola palustris L. Violet. *? dzi'-na-so-so.*

Wood (general term). *o'-pi. wu'-pi.* Commonly used as the equivalent of tree or shrub, i. e., woody plant, or even of plant in general at times.

Wyethia amplexicaulis Nutt. *pi'-a-kĕn-dzĭp: pi'-ûp*, big, + *a'-kĕn-dzĭp*, q. v. Seeds formerly gathered as food. The roots furnished a remedy applied externally upon bruised and swollen limbs, etc.

Xanthium strumarium var. **echinatum.** Cockle-bur. *kwĭ'-tcĕm-bo-gop.* The name means "cow or bison fruit."

Zauschneria californica Presl. *mu'-tu-nants-ûm-bĭ-dji. mu'-tu-nants-pi-na-dĭ-kunt.* The first name means "humming-bird's milk"; the second approximately "humming-bird's sugar or sweet food," "humming-bird's nectar." The same name is also applied to *Gilia aggregata*, etc., being of generic character and independent of the more special names of each form.

Zea mais L. Indian Corn; Maize. *ko'-mu. korn* (from English).

Zygadenus nuttalli Gray. Poison Sego. *ta'-bĭ-si-go-ûp; ta'-bĭ-si-go. ta'-bĭ-tci-gop: ta'-bĭ*, sun, referring to the clustered flowers (cf. *ta'-bĭ-si-bû-pi*), + *si'-go*, + *ûp.* Furnished a medicine used as an emetic. Also one used in certain venereal affections (*tĭm'-bai-na-tsu*).

List According to Gosiute Names, with Scientific and Popular Equivalents

A.

a'-da-rûm-bĭp. See *a'-di-rûm-bĭp.*

a'-di-rûm-bĭp. Ceanothus velutinus Dougl. New Jersey Tea. Cf. the next name. Symphoricarpos oreophilus Gray. Snowberry. This plant is not known to all under this name.

a'-di-rûm-bĭp-äñ-ka-sip. Ceanothus velutinus Dougl. New Jersey Tea. By this fuller name distinguished from the Snowberry by those who designate the latter under the preceding name.

ai'-bi-baip. Scirpus maritimus L. Club-rush; Bulrush. Carex hookeriana Dew. Sedge. The name is also sometimes applied to C. utriculata Boott. and other, especially larger, forms, more strictly designated by *pa'-gi-gĭp*, q. v.

ai'-di-wĭ-sĭ-gi-nûmp. ? Epilobium spicatum.

ai'-go-po-gûmp. Ribes lacustre Poir. Currant. Ribes leptanthum Gray, var. brachyanthum. Currant.

ai'-go-û-pi. Pinus edulis Engelm. Piñon Pine.

ai'-gwa-bi. Opuntia, various species. Cactus.

ai'-gwa-bo-gûp (*-gop*). Cnicus eatoni Gray. Thistle. Cf. also *ai-wa-bo-gûp.*

ai'-tcĭb. Rhus trilobata Nutt. Sumac. Cf. *u'-i-tcib*, as the name is often heard in the Skull Valley band.

ai'-wa-bo-gûp (*-gop*). Cnicus eatoni Gray. Thistle. Cf. *ai'-gwa-bo-gûp.*

a'-ka. Name of a plant not identified with certainty. Its seeds are said to have been eaten.

a'-kĕn-dzĭp. Balsamorrhiza hookeri Nutt. More specifically *wi'-a-kĕn-dzĭp*, q. v. Balsamorrhiza sagittata Nutt. Arrow-root. More specifically *ku'-si-a-kĕn-dzĭp*, q. v.

a'-na-gwa-nûp. Cleome integrifolia Torr. and Gray.

an-dzûp'. Cymopterus longipes Watson.

añ'-go-bi. Pseudotsuga douglasii Carr. Douglas Spruce.

añ'-go-gwa-nûp. Juniperus communis var. alpina. Cf. *wa'-pi.*

añ'-go-ma-tai-yu. See *añ'-go-ma-tsai-yu.*

añ'-go-ma-tsai-yu. Deyeuxia canadensis Beauv. Reed Bent Grass. Deyeuxia stricta Trin. Reed Bent Grass. Poa pratensis L. Meadow or Blue Grass. Cf. *ni'-a-bĭp.*

añ'-go-mu-tsa-wai-ni. Deschampsia cæspitosa Beauv., var. The name refers to its growth among the spruce (*añ'-go-bi*).

añ'-gû-pi; añ'-gûp. See *än'-ka-mo-do-nûp*, from which this is shortened.

añ'-gŭt-a-gŭp. See *än'-ka-mo-do-nûp*, the standard name.

äñ'-kai yûmp. Rhus glabra L. Sumac. Shortened from *äñ'-ka-ti-wi-ûmp*, the full form.

äñ'-ka-koi-nûmp. Sometimes heard in place of *añ'-ka-koi-nûp*, q. v.

äñ'-ka-koi-nûp. Same as *äñ'-ka-kwi-nûp*, the preferred and etymologically more proper pronunciation.

äñ'-ka-kwa-tci-ûp. A species of Hordeum, or barley grass.

äñ'-ka-kwi-nûp. Cornus stolonifera Michx. Kinnikinnick.

äñ'-ka-mo-do-nûp. Shepherdia argentea Nutt. Buffalo-berry.

äñ'-ka-pa-bu-ip. Polygonum erectum L. Cf. *pi'-a-pa-bu-ip.*

äñ'-ka-pa-dja-rûmp. Rumex salicifolius Weinman. Dock; Sorrel.

äñ'-ka-pai-dja-rûmp. Same as preceding.

äñ'-ka-pa-ka-rûmp. See *äñ-ka-pa-dja-rûmp.*

äñ'-ka-pa-ri-ûmp. Fragaria vesca L. Strawberry.

äñ'-ka-pa-rûmp. Same as *äñ'-ka-pa-dja-rûmp.*

äñ'-ka-po-gomp. Occasional for *äñ'-ka-mo-do-nûp*, which see.

äñ'-ka-pu-i. See *äñ'-ka-pa-bu-ip*, the full form.

äñ'-ka-si-yu-na. Oxyria digyna Hill. Mountain Sorrel.

äñ'-ka-ti-wi-a. See *äñ'-ka-ti-wi-ûmp.*

äñ'-ka-ti-wi-ûmp. Rhus glabra L. Sumac.

äñ'-ka-tso-nap. See *äñ'-ka-tso-ni-baip.*

äñ'-ka-tso-ni-baip, Lithospermum hirtum Lehm. Gromwell.

äñ'-ka-wa-dzûmp. Eriogonum microthecum Nutt., etc.

a'-pa. Valerianella congesta DC.

a'-po. Atriplex truncata Torr.

a'-ra-dŭm-bĭp. See *a'-di-rûm-bĭp.*

a'-ra-si-mu. Clematis douglasii Hook. Clematis; Virgin's Bower. See *o'-bĭn-da-ma-nûmp.*

a'-tam-bĭ-tcĭp (*-tcûp*). Betula angustifolia Koch.

ats. Amaranthus sp.

B. (See also P.)

ba. Seed.

ba'-hwap. Juncus balticus Deth and parryi Engelm. Hog-rush. See *pa'-ma-wûp.*

bi'-a-gûnt. Catkin, female, of willows, etc.

bĭ'-dji-gwa-nûp. Cleome integrifolia Torr. and Gray.

bĭ'-tca-mok. Eriogonum heracleoides Nutt. Cf. Humulus lupulus L.

bĭ'-tca-mu-kûm. Eriogonum heracleoides Nutt. Peucedanum simplex.

bĭ'-tci-gwa-nûp. Same as *bĭ-dji-gwa-nûp.*

büc. Sap; juice.

D.

daĭ'-gwi-wĭq. Stipa comata Trin. and Rupr. Feather Grass.

da'-pa-rai-nûmp. Astragalus iodanthus Watson. Rattle-weed.

dzi'-cûp. Atriplex canescens (Pursh) James.

dzi'-na. Claytonia caroliniana var. sessilifolia Torr. Spring-beauty. Solanum tuberosum. Potato. Occasional and secondary. Cf. *go'-tsa-wĭn.*

dzi'-na-so-so? Viola palustris L. Violet.

G.

go'-ni-na-tsu. See *koi'-na-tsu,* the more common form.

go'-tsa-wĭn. Solanum tuberosum L. Potato. Cf. *dzi'-na.*

gu'-su-wûp. Negundo aceroides Moench. Box-elder.

H. (See also under vowels.)

ha'-ta-bi-tcĭp. Ranunculus sceleratus L. Buttercup. See *a'-tam-bĭ-tcĭp,* the more usual form.

hĭ'-bĭñ'-gûp. Flower.

hĭ'-na-bi. Cowania mexicana Don. Cliff Rose. Purshia tridentata DC.

hu'-gû-pi. See also *u'-gû-pi,* the more usual form in which heard.

I.

i'-am-bĭp. Gilia gracilis Hook. and linearis Gray. Gilia.

ĭ'-ca-bo-go-nûp. Veratrum californicum Durand. False Hellebore. Smilacina amplexicaulis Nutt. False Solomon's Seal.

ĭ'-ca-bo-gûp; ĭ'-ca-bo-gop. See *ĭ'-ca-bo-go-nûp.*

ĭ'-ca-mo-ta-qa. Gymnolomia multiflora Benth. and Hook. See *i'-dja-pain-po-go-nûp.* Aconitum fischeri. Monkshood.

ĭ-ca-ro-dzûp. Potentilla plattensis Nutt. Fivefinger.

ĭ'-ca-ûn-toi-nûmp. Polemonium cœruleum L. Greek Valerian.

i'-djaip. Peucedanum graveolens Watson, etc.

ĭ'-djam-ûm-bu-i. Catkin, male, of willow, etc.

ĭ'-dja-pa-bo-gop. Same as *ĭ'-ca-bo-go-nûp,* which see.

ĭ'-djû-pain-po-go-nûp. Smilacina amplexicaulis Nutt. False Solomon's Seal.

ĭ'-gi-na-ga. Seedling; germinating plant.

ĭ'-gi-si-a-ka. Bud.
ĭ'-na-bi. See *hĭ'-na-bi.*
ĭ'-sa-yu-gĭp. Equisetum hiemale L. Scouring Rush.
i'-tcĭb. Rhus trilobata Nutt. Sumac. Cf. *ai'-tcib.*
i'-ûm-pi. Helianthus annuus L. Sunflower.
i'-ûp. See the following.
i'-û-pi. Chenopodium leptophyllum Nutt. Pigweed; Goose-foot.

K. (See also G.)

ka'-bĭp. Samara of Negundo, Acer, etc. Cf. *näñ'-ki-tso.*
kai'-i-ûmp. Ribes aureum Pursh. Missouri Currant.
kai'-si-na-bop. Erigeron macranthus Nutt. Fleabane.
ka'-na. Lewisia rediviva Pursh. Bitter-root.
ka'-na-gwa-na. Œnothera cæspitosa Nutt. Evening Primrose. ? Geranium fremonti Torr. Geranium; Crane's Bill. Cf. *pa'-hu-ip.*
ka'-na-gwa-nu. See *ka'-na-gwa-na.*
kan'-gûm-pi. Grayia polygaloides Hook. and Arn. Shad Scale. Cf. *mo'-do-nûp.*
kan'-kwai-tcûp. Hordeum nodosum L. and jubatum L. Barley.
kan'-kwa-tci-ûp. See the preceding.
ka'-nûm-pi; ka-nûm'-pi. Atriplex confertifolia Watson. See *suñ*, the standard name.
ko'-ga-bi. Polygonum imbricatum Nutt. Cf. following.
ko'-ga-rûm-pi. Same as preceding, fuller form.
koi'-di-gĭp. Castelleja miniata Dougl. Painted-cup.
koi'-gwa-nûp. Parnassia parviflora DC. Grass of Parnassus.
koi'-na-komp. Malvastrum munroanum Gray. False Mallow. Sphæralcea emoryi Torr. Cf. *pi'-a-koi-na-komp.*
koi'-na-tsu. General term applied to various medicines and the plants furnishing them which are used in intestinal and stomach troubles. See Arenaria, Silene, etc.
koi'-no-komp. Same as *koi'-na-komp*, which see.
koi'-nûmp. Microseris, species. Cf. *mu'-tci-gĭp.*
koi'-si-na-bop. Erigeron macranthus Nutt. Fleabane. Cf. *kai'-si-na-bop.*
koi'-ya-kûmp. See *koi'-na-komp.*
ko'-ka-bi. See *ko'-ga-bi.*
ko'-mu. Zea mays L. Indian Corn. See *korn.*
ko'-no-gwĭp. Heracleum lanatum Michx. Cow Parsnip.

korn. From the English. See *ko'-mu.*

ko'-sa-mu-i-tci-gĭp. One of the "thistles."

ko'-si-bo-qûn-tos. Chænactis douglasii Hook. and Arn. Cf. *wañ'-gin-gĭp.*

ku'-hwa. Mentzelia albicaulis Dougl., etc. ? Amsinckia tessellata. Cf. *tso'-hamp.*

ku'-i. See *ku'-yi-gwa-nûp.*

ku'-i-do-gĭp. See *koi'-di-gĭp.*

ku'-i-gwa-nûp. Saxifraga nivalis L. Saxifrage. Cf. *toi'-ya-gwa-nûp.* ? Antennaria dioica Gaertn. Everlasting.

ku'-ki-koi-nûmp. Gutierrezia euthamiæ Torr. and Gray. Torch-weed; Rabbit Brush.

kûm'-a-ra-tsi-yu-gĭp. Glyceria aquatica Smith. Reed Meadow Grass. Cf. *pa'-si-wûmp.*

kûm'-ûn-tsi-a. Chenopodium rubrum L. and capitatum Wat. Pig-weed; Goose-foot. Cf. *on'-tĭm-bi-wai*, also Monolepis chenopodioides.

küñ'-ga. Allium bisceptrum Watson and acuminatum Hook. Onion.

ku'-ni-ro-ûmp. Acorn.

ku'-ni-ûp. Staminate flowers of Negundo, etc. Quercus undulata Torr. var. Scrub Oak.

ku'-no-gi. See the following.

ku'-no-gĭp. Sambucus racemosa L. Elder.

ku'-si-a-ka; ku'-si-ak. An abbreviated form of *ku'-si-a-kĕn-dzĭp*, which see.

ku'-si-a-kĕn-dzĭp. Balsamorrhiza sagittata Nutt. Arrowroot.

ku'-si-pa-hwats; ku'-si-pa-wats. Shortened forms of *ku'-si-pa-wa-tsĭp.*

ku'-si-pa-wa-tsĭp. See *ku'-tsi-pa-wa-tsĭp.*

ku'-si-wañ-go-gĭp. Potentilla pennsylvanica L. Five-finger.

ku'-si-wup. Holodiscus discolor var. dumosus Maxim.

ku'-si-ya-ni-gûnt. Krynitzkia fulvocanescens Gray.

ku'-so-nĭp. Brizopyrum spicatum Hooker.

ku'-tsa-ga-ti-wo-ra-rat. Potentilla pennsylvanica L. Five-finger.

ku'-tsi-pa-wats. See *ku'-tsi-pa-wa-tsĭp.*

ku'-tsi-pa-wa-tsĭp. Artemisia discolor Dougl. and trifida Nutt. Sage. See *ku'-si-wañ-go-gĭp* supra. Valeriana sylvatica Banks.

kwa'-tci-ûp. Hordeum nodosum L. and jubatum L. Barley. Cf. *kan'-kwai-tcûp.*

kwi'-ni-ûp. See *ku'-ni-ûp.*

kwi'-ta-kwa-nûp. Lupinus leucophyllus Dougl., parviflorus Nutt., etc. Lupine.

kwi'-ta-po. See the next.

kwi'-ta-po-ni. Orogenia linearifolia Watson.

kwĭ'-tcĕn-bo-gûp. Xanthium strumarium var. echinatum. Cocklebur.

M.

mĭ'-ta-kom. See the following word.

mĭ'-ta-komp; mĭ'-ta-kûmp. Sidalcea malvæflora Gray.

mo'-a-ba-bu-ĭp. Euphorbia montana Engelm., dentata Michx., etc.

mo'-a-gûp. Stephanomeria exigua Nutt. Anaphalis margaritacea Benth. and Hook. Everlasting. Arnica parryi Gray.

mo'-a-gwa-nûp. Cardamine cordifolia Gray. Bitter Cress.

mo'-a-kûmp. Balsamorrhiza hookeri Nutt. Cf. *o'-a-kûmp*, the preferable form of the word above, and *wi'-a-kĕn-dzĭp.*

mo'-a-mu-ĭ-tci-gi; mo'-a-mu-ĭ-tci-gĭp. Crepis occidentalis Nutt.

mo'-a-pa-oñ-gop. Ranunculus aquatilis L. var.

mo'-do-büc. ? Hedysarum mackenzii, q. v.

mo'-do-nûp. Grayia polygaloides Hook. and Arn. Shad-scale.

mo'-gon-dzi-ûmp. Berries of Rosa nutkana Presl.

mo'-ha-gûp. Same as *mo'-a-gûp.*

mo'-no. Deschampsia danthonioides Munro.

mo'-ta-ga. See *mo'-ta-qa.*

mo'-ta-komp. Probably the same as *mo'-ta-qa*, q. v. The name was heard applied by one Gosiute to Viola beckwithii.

mo'-ta-qa. Cf. *tĭ'-da-ya-gûp.* Layia glandulosa Hook. and Arn. Gymnolomia multiflora Benth. and Hook. Cf. *ĭ'-ca-mo-ta-qa.* Helenium autumnale L. Sneeze-weed. The name is properly applied to these and their relatives and has no popular English equivalent. As may be seen, these forms in general may have also a more specific designation as well. It is probably used in a more restricted sense for Layia, etc.,—daisy-like forms.

mo'-ta-qai. Occasionally heard for the preceding.

mo'-tci-gi. See *mo'-tci-gĭp.*

mo'-tci-gĭp. Same as *mu'-tci-gĭp*, which see.

mu'-a-kûmp. See *mo'-a-kûmp.*

mu'-da-bĭs. Lathyrus ornatus Nutt.

mu'-ha-kûm. See the next word.

mu'-ha-kûmp. Grindelia squarrosa Dunal. Arnica. Helianthella uniflora Torr. and Gray.

mu'-ha-ti-bu-i. Crepis glauca Torr. and Gray. Cf. *mu'-tci-gĭp.*

mu'-ĭ-tci-gi. Same as *mu'-i-tci-gĭp.*

mu'-ĭ-tci-gĭp. See *mu'-tci-gĭp.*

mu'-pa-tai-gi-nûp. Arctium lappa L. Burdock.

mu'-tci-gi. See the following.

mu'-tci-gĭp. Hieracium gracile Hook. and scouleri Hook. Hawkweed; Thistle; Sow-thistle. Sonchus asper Vill. Crepis glauca Torr. and Gray. Lactuca leucophæa Gray and ludoviciana DC. Lettuce. ?Troximon aurantiacum Hook. The word corresponds approximately to the English "thistle" as popularly used, applying to quite a variety of forms as above indicated. Some of these have their more specific designations as indicated under each.

mu'-tsa. Mammillaria sp.

mu'-tsai-kûmp. Sidalcea malvæflora Gray. Cf. *mĭ'-ta-kûmp.*

mu'-tsĕm-bi-a-dĭ-kûp. Townsendia sericea Hook. and other alpine forms eaten by mountain sheep.

mu'-tu-nats-ûm-bĭ-dji. Gilia aggregata Spreng., Zauschneria californica Presl, etc.

N.

na'-da-pa-ra-na-gĭnt. Astragalus iodanthus Watson. Buffalo-bean. Cf. *da'-pa-rai-nûmp.*

na'-da-pu-gai-gi. Spartina gracilis Trin. Salt Grass.

na'-da-pu-gu-i-gi. See *na'-da-pu-gai-gi.*

nai'-a-bĭp. See *ni'-a-bĭp.*

na'-na-rĭp. Linum kingii Watson. Flax.

näñ'-ki-tco. See *näñ'-ki-tso.*

näñ'-ki-tso. Samara of Negundo, Acer, etc. Cf. *ka'-bĭp.*

nan'-tai-bĭtc. See *nan'-te-bĭtc.*

nan'-te-bĭtc. Gnaphalium sprengelii Hook. and Arn. Cudweed. Madia glomerata Hook.

ni'-a-ba-so-nĭp. See *ni'-a-bĭp.*

ni'-a-bi. Same as the following.

ni'-a-bĭp. Deyeuxia canadensis Beauv. and stricta Trin. Reed Bent Grass. Poa pratensis L. Blue Grass. Poa tenuifolia Nutt. Bunch Grass; Meadow Grass.

nĭ'-di-ba. Lycopus sinuatus Ell. Water Horehound.

nĭ'-dĭb; nĭ'-dĭp. Same as *nĭ'-di-ba.*

nĭn'-ûn-tsai. Geum macrophyllum Willd.

ni'-u-ru-pam-pi; nu'-ro-pam-pi. Ranunculus cymbalaria Pursh. Buttercup.

O.

o'-a-kûmp. Balsamorrhiza hookeri Nutt. Cf. *mo'-a-kûmp* and *wi'-a-kĕn-dzĭp.*

o'-a-pa-dza-ki. Eriogonum heracleoides Nutt. and umbellatum Torr. Cf. *bĭ'-tca-mu-kûm* for the first and *sa'-na-kûn-da* for the second.

o'-a-tûmp. Avena sativa L. Oats.

o'-a-yĭnk. Same as *oi'-yĭnk*, and about equally common with it. Doubtless the original form (*o'-a-bĭt*, yellow, + *yĭñk*).

o'-bĭn-da-ma-nûmp. Clematis douglasii Hook. and ligusticifolia Nutt. Virgin's Bower.

o'-do. Shortened from *o'-do-rop*, which see.

o'-do-rop. Same as *o'-ro-rop*, the more usual form.

o'-gĭp. Phalaris arundinacea L. Canary Grass. Aristida purpurea Nutt. Triple-awned Grass. Cf. *o'-gwĭp; u'-gwĭp; oi'-ya-o-gwĭp.*

o'-gwĭp. See *o'-gĭp.*

oi'-tcĭp. Cratægus oxycanthus. Thorn.

oi'-tcu-mo. Eriogonum cernuum Nutt. and inflatum Torr. Sometimes applied also to Siline antirrhina.

oi'-tcûn-goi-djok. Sedum debile Watson, etc. Stone-crop.

oi'-tcu-o; oi'-tcu-yo. See *oi'-tcu-mo.*

oi'-yĭnk. Solidago canadensis L., nemoralis, Ait., etc. Goldenrod. Same as *o'-a-yĭñk.*

o'-ka. Salicornia herbacea L. Samphire. Rarely for *pa'-o-ka*, which see. Phoradendron juniperinum Engelm. Mistletoe. Cf. *pa'-oila*, which is the definite and far more frequent form, *oka* being narrowly applied to the other plant.

on'-tĭm-pai-wa. Variant from *on'-tĭm-pi-wa-tsĭp*, which see.

on'-tĭm-pa-wa. See *on'-tĭm-pa-wa-tsĭp.*

on'-tĭm-pa-wa-tsĭp. See *on'-tĭm-pi-wa-tsĭp.*

on'-tĭm-pi-a-wa. See the two following words of which this is a shortened form. It stands most commonly for the second.

on'-tĭm-pi-a-wa-da. Artemisia biennis Willd.

on'-tĭm-pi-wai. See *on'-tĭm-pi-wa-tsĭp.*

on'-tĭm-pi-wa-tsĭp. Chenopodium rubrum L. and capitatum Watson. Pigweed.

o'-pi. Wood; tree or shrub; plant.

o'-pĭp. Shepherdia argentea Nutt.
o'ra. Stem; stalk; petiole; peduncle, etc.
o'-ro. Shortened form of *o'-ro-rop*, which see.
o'-ro-rop. Agropyron repens Beauv. Blue-joint. Cf. *wa'-don-dzĭp* and *pĭ'-ga-yu-gĭp.* Elymus canadensis L. Wild Rye; Lyme Grass. Cf. *ti'-wa-bi-nĭp.* Elymus sibiricus L. Wild Rye; Lyme Grass.
o'-ta-bi-da. Glaux maritima L. Sea Milkwort.

P.

pa-at'-qa. See *pa-otq'-ga.*
pa'-bĭp. Shortened form of *pa'-bu-ĭp*, q. v.
pa'-bo. From *pa'-bo-go*, which see.
pa'-bo-bu-ĭp. Sagittaria variabilis Engelm. Arrow-head.
pa'-bo-go. Cnicus undulatus Gray. Plumed Thistle.
pa'-bo-gwo. Same as the preceding.
pa'-bu-ip. Commonly used as a general term indicating plants growing in water or wet places with the leaves floating or above the water. ? Dodecatheon meadia L. Shooting Star. See *pa'-hu-ip.* Sagittaria variabilis Engelm. Arrow-head. See *pa'-bo-bu-ĭp.*
pa'-da-wi-si-go-ûp. ? Carex utriculata, q. v.
pa'-ga-sau-wi-no-ûp. Delphinium bicolor Nutt. and menziesii DC. Larkspur.
pa'-ga-so-nap. Epilobium spicatum L. Willow-herb.
pa'-gi-gĭp. Carex jamesii Torr., etc. Sedge. Carex utriculata Boott. Sedge. Cf. also *ai'-bi-baip.*
pa'-go-ni-ûp. Acer glabrum Torr. Maple.
pa'-go-no-gĭp. See *pa'-go-no-gwĭp.*
pa'-go-no-gwĭp. Sambucus glauca Nutt. Elder.
pa'-gu-ĭp. Polygonum hartwrightii Gray.
pa'-gwa-nûp. Mentha canadensis L. Mint.
pa'-gwo-dzûp. Claytonia perfoliata Don. Spring Beauty.
pa'-gwo-nûp. ? Chenopodium capitatum Watson. Pigweed.
pa'-ho-qa. See *pa-o'-ka.*
pa'-hu-ip. Dodecatheon meadia L. Shooting Star. Geranium fremontii Torr.
pa'-hwap. See *pa'-ma-wûp.*
pa'-hwats. Artemisia dracunculoides Pursh.
paidj. Phragmites communis Trin. Reed.
pai'-gĭp. Same as *pa'-gi-gĭp*, which see.
pai'-ya. Smilacina stellata Desf. False Solomon's Seal.

pai'-ya-bo-sip. Lemna. Duck-meat; Duck-weed. Cf. *wa'-da-bu-ĭp.*

pai'-yo-nĭp. Juncus bufonius L. Bog-rush.

pa'-kwi-ni-ûp. See *pa'-go-ni-ûp.*

pa'-ma-wûp. Juncus balticus Deth. and parryi Engelm. Bog-rush.

pam'-bu-i-ûp. Lycopodium sp.

pa'-mo. See *pa'-mu.*

pa'-mu. Nasturtium palustre DC. and var., etc. Water-cress. ? Ranunculus aquatilis L. var.

pa'-na-tĭ-so. Mentha canadensis L. Mint. See *pa'-gwa-nûp.*

pa'-na-tsu. Apparently the same as the preceding and etymologically preferable in such case (*pa*, water, + *na'-tsu*, medicine).

pa'-na-wi. Triglochin maritimum L. Arrow-grass.

pa'-o-gûmp. See the next.

pa'-o-gûm-pi. Aquilegia cærulea James. Columbine. Cf. *pa'-wa-gûm-pi.*

pa'-o-ka; pa-o'-ka; pa-o'-qa. Salicornia herbacea L. Samphire; Glasswort.

pa'-oñ-gop. See *pa'-oñ-gûp.*

pa'-oñ-gûp. Hypnum sp. Moss. Polytrichum juniperinum. Moss. See *tĭm'-pĭn-pa-bo-i-ûp* and *pi'-a-pa-oñ-gûp.*

pa'-o-tĭm-bĭtc. Sium cicutifolium Gmelin. Water Parsnip.

pa-otq'-ga. Aster adscendens Lindl. Starwort; Aster.

pa'-ra-tĭ-tsĭn-bo-gop. ? Argemone mexicana var. hispida Gray. Prickly Poppy. Cf. *toi'-ya-na-bo-gop.* Probably the full form of *pa'-tsi-na-bo-gop*, which see.

pa-ra-wĕ-ci-gop. Carex sp. Sedge.

pa'-ri-ki-nûmp. Citrullus vulgaris L. Watermelon.

pa'-ru-sip. Glaux maritima L. Sea Milkwort.

pa'-sa-gwĭp; pa'-sa-gwûp. Cystopteris fragilis Bernh. Fern.

pa'-sa-gwo-na-komp. See *pa'-sa-koi-no-komp.*

pa'-sa-koi-no-komp. Malvastrum coccineum Gray. False Mallow. Cf. *koi'-no-komp.*

pa'-sa-pa-oñ-gop. Glaux maritima L. Sea Milkwort.

pa'-sa-ton-dzĭp. Hedysarum mackenzii Richard.

pa'-sa-wi-gûmp. Potentilla glandulosa Lindl. Five Finger.

pa'-sa-wi-gûn-za. Heuchera rubescens Torr. and other species. Alum Root.

pa'-si-go. Camassia esculenta Lindl. Camass.

pa'-si-gwĭp (*pa'-si-go-ûp*). Angelica pinnata Watson. Osmorrhiza nuda Torr. Sweet Cicely.

pa'-si-hwu. See *pa'-sa-hwu-mûts.*

pa'-si-wûmp. Glyceria aquatica Smith. Reed Meadow Grass. Glycosma occidentalis Nutt.?

pa'-tsi-na-bo-gop. Cnicus sp. Plumed Thistle.

pa'-ûm-ûp. See *pa'-ma-wûp.*

pa'-uñ-ga. Erigeron macranthus Nutt. Fleabane. Cf. *kai'-si-na-gop.*

pau'-wats. See *pa'-hwats.*

pa'-wa-gûmp. See next word.

pa'-wa-gûm-pi. Aquilegia cœrulea James. Columbine. See *pa'-o-gûm-pi.*

pa'-wa-pi. Juniperus scopulorum Sarg. Red Cedar.

pa'-wa-sip (*pa'-wa-tsĭp*). Artemisia dracunculoides. Same as *pa'-hwats* and *pau'-wats.*

pa'-yam-pa; pa'-yamp. "Water yamp," one of the Umbelliferæ.

pi'-a-ba-gwa-nûp. Stachys palustris L. Wound Wort. Only occasionally so designated, being commonly known as *toi'-ya-ba-gwa-nûp*, which see.

pi'-a-da-bi-wûmp. See *pi'-a-ta-bi-wûmp.*

pi'-a-da-rûm-bĭp. See *pi'-a-ra-dûm-bĭp.*

pi'-a-ga. Eriogonum inflatum Torr.? Probably not specific or restricted.

pi'-a-kĕn-dzĭp. Wyethia amplexicaulis Nutt.

pi'-a-koi-na-komp. Sphæralcea emoryi Torr.

pi'-a-ku-hwa. Mentzelia lævicaulis Torr. and Gray.

pi'-a-mo-a-gûp. See *pi'-a-mo-ha-gûp.*

pi'-a-mo-ha-gûp. One of the Compositæ. Cf. *mo'-a-gûp.*

pi'-a-näñk. Mitella trifida Graham. Mitre-wort.

pi'-a-pa-bu-ĭp. Sagittaria variabilis Engelm. Arrow-head. See *pa'-bo-bu-ĭp.*

pi'-a-pa-oñ-gop. Polytrichum juniperinum. Moss.

pi'-a-pa-oñ-gop-pai-dja-rûmp. Polygonum amphibium L.

pi'-a-pa-otq''-ga. Helianthella uniflora Torr. and Gray. Cf. *mu'-ha-kûmp.*

pi'-a-po-gop. Glycosma occidentalis Nutt.

pi'-a-poi-na. Arabis retrofracta Gray.

pi'-a-ra-dûm-bĭp. Lonicera utahensis Watson and involucrata Banks. Woodbine.

pi'-a-si-bo-i-nûp. Same as the following.

pi'-a-si-bo-i-ûp. Arabis retrofracta Gray. Rock Cress.

pi'-a-so-nĭp. Applied to several large grasses. The word means "big grass."

pi'-a-ta-bi-wûmp. Orthocarpus linearifolius Genth. Cf. *ta'-bi-wûmp.*

pi'-ats. Cf. *ats.* Seeds used as food.

pi'-a-tso-hwa. ? Franseria hookeriana Gray.

pi'-a-wa-da. Artemisia biennis Willd. Cf. *on'-tĭm-pi-a-wa* and *wa'-da.*

pĭ'-ga-dĭt. See *pĭ'-ga-yu-gĭp.*

pĭ'-ga-yu-gĭp. Agropyron repens Beauv. Blue-joint.

pi'-o-ra. A rather indefinite name applied loosely to Hedysarum and other tall or climbing Leguminosæ.

pĭ'-tca-gwa-nûp. Sphæralcea rivularis Torr.

pi'-wa-nûp. Asclepiodora decumbens Gray?

po'-go. See *po'-gwo.*

po'-go-nûp. Currant (general term); berry. Ribes aureum Pursh. Missouri Currant. (See page 344.)

po'-gûmp. See *po'-go-nûp.*

po'-gwo. Cnicus eatoni Gray. Thistle.

po'-ho-bi. Artemisia tridentata Nutt. Sagebrush.

po'-ho-ru. Aphyllon fasciculatum Torr. and Gray. Cancer-root.

poi'-na. See *poi'-ya.*

poi'-ya. Sisymbrium canescens Nutt. Hedge Mustard.

po'-nak. See *poi'-ya.*

pu'-i-ba-u. Nicotiana attenuata Torr. Tobacco.

pu'-i-dĭ-kûp. Medicago sativa L. Lucern; Alfalfa.

pu'-i-dĭ-sas. Erigeron leiomerus Gray. Fleabane. ? Monardella odoratissima Benth.

pu'-i-pa-si-go. Primula parryi Gray. Primrose. Cf. *toi'-ya-da-ti-bu-da.*

pu'-i-si-a-ka. General name for green or growing plants (*pu'-i-bĭt*, green, + *si'-a-ka*, plant, which see).

pu'-i-wa-nûp. Eriogonum brevicaule Nutt.

pûñ'-go-na-tsu. A general term applied to a considerable number of plants used as remedies for horses (*pûñ'-go*, horse, + *na'-tsu*, medicine). Such are Astragalus junceus, Galium aparine, Lygodesmia, Silene multicaulis, etc.

pûñ'-go-ûn-da-mi. A somewhat general term applied to a number of plants. (From *pûn'-go*, horse, + *ûn*, possessive, + *da'-mi*).

Smilacina amplexicaulis Nutt., Triglochin maritimum L., are among the plants grouped under this name, utterly divergent forms being brought together upon some basis other than resemblance to each other.

R. (See also D and T.)

ri'-a-bi. Rare for *ni'-a-bi*, which see.

S.

sa'-gû-pi. Salix amygdaloides Anders., lasiandra Benth., flavescens Nutt. Willow.

sai'-gi-tamp. Spiranthes romanzoffiana Cham. Ladies' Tresses.

saip. Scirpus lacustris L. var. occidentalis Watson. Bulrush.

sai'-ya-hyu-gĭn. Saponaria vaccaria. Soapwort.

sa'-na-kûn-da. Eriogonum microthecum Nutt., ovalifolium Nutt., umbellatum Torr., etc.

sa'-na-kûnt. See *sa'-na-kûn-da.*

san'-añ-go-bi. Abies menziesii Lindl. Balsam.

si'-a-ka. Plant; branch; etc.

si'-bi. Phlox longifolia Nutt. Sweet William; Phlox.

si'-bo-i-ûmp. Nasturtium palustre DC. var. Water-cress.

si'-bo-i-ûp. Cleome lutea Hook. Arabis holboellii Hornem.

si'-bû-pi. Bigelovia douglasii Gray. Greater Rabbit-brush. Rayless Goldenrod. Tetradymia canescens DC. var.

sĭ'-gi. Leaf.

si'-go. Calochortus nuttallii Torr. and Gray. Sego.

si'-hĭp. See *si'-o-pi.*

si'-na-tsu. A remedy for kidney or bladder trouble; applied to various plants furnishing such remedies.

sĭñ'-gûp. See *sĭñ'-gû-pi.*

sĭñ'-gû-pi. Populus tremuloides Michx. Quaking Aspen.

si'-o-pi. General name for species of Salix corresponding to the English "willow." The several types of willows, or rather some of them, have in addition more special names. See under Salix in preceding list.

si'-ûñ-gûn. Branch; shoot. Cf. *si'-a-ka.*

si'-wûmp. Glyceria distans Wahl and nervata Trin. Manna Grass. Cf. also *tai'-gwi-bi* for the latter. Festuca tenella Willd. Fescue Grass. Cf. *yo'-ni-so-nĭp.*

so'-ai-tûmp. Agaricus. Mushroom.

so'-go-ba-gwĭp. Bryum sp. Moss.

so-ho-bi. See *so'-o-pi.*
so'-ko-bai-gûn-ĭp-wa. Potentilla anserina L. Five-finger.
so'-ko-ri-bo-ûmp. Bryum sp. Moss.
so'-ko-ri-ûmp. Berberis repens Lindl. Oregon Grape.
so'-nĭp. General term corresponding to the English "grass."
so'-o-pi. Populus angustifolia James. Cottonwood.
suñ. From *su'-no*, which see.
su'-no. Atriplex confertifolia Watson.

T.

ta'-bĭ-ci-pomp. See *ta'-bĭ-si-bû-pi.*
ta'-bĭ-si-bû-pi. Bigelovia pulchella Gray. Rabbit-brush.
ta'-bĭ-si-go. From *ta'-bĭ-si-go-ûp*, which see.
ta'-bĭ-si-go-ûp. Zygadenus nuttallii Gray. Poison Sego.
ta'-bĭ-tci-gop. See *ta'-bĭ-si-go-ûp.*
ta'-bĭ-si-pomp. See *ta'-bĭ-si-bû-pi.*
ta'-bĭ-tci-pomp. See *ta'-bĭ-si-bû-pi.*
ta'-bi-wûmp. Orthocarpus linearifolius Benth. Cf. *pi'-a-ta-bi-wûmp.*
ta'-da-bi. Rhus toxicodendron L. Poison Oak or Ivy.
tai'-gwi-bi. Glyceria nervata Trin. Cf. *si'-wûmp*, also applied in a more general way to this plant.
ta'-ka-dĭ-da-rup. See *ta'-ka-dĭ-di-a-rûp.*
ta'-ka-dĭ-di-a-rûp. Abronia fragrans Nutt. Sand Puff.
ta'-kan-dĭ-dai-kûp. See *ta'-kan-dĭ-di-a-gûp.*
ta'-kan-dĭ-di-a-gûp. Erigeron grandiflorus Hook. Fleabane.
ta'-kûm-bu-i. Polygonum hartwrightii Gray. Cf. *pa'-gu-ĭp.*
ta'-ni-kûmp. Arnica cordifolia Hook.
tan'-tso. Trifolium, various species, corresponding in usage precisely, or nearly so, to our English word "clover."
ta'-tsĭp. Pachystima myrsinites Raf. Box.
tci'-cop. Eurotia lanata Moq. White Sage.
te'-e-pa-ga-so-wûp. Mertensia oblongifolia. Lungwort.
ti'-a-bi. Rosa nutkana Presl. Rose.
ti'-a-sa-ton-dzi. Astragalus utahensis Torr. and Gray. Rattle-weed. Cf. *to'-sa-wu-da.*
ti'-a-tso-nap. One of the Boraginaceæ, "Little stickseed." Cf. *tso'-nop.*
ti'-ba. Pine-nuts; nuts of Pinus monophylla.
ti'-ba-bi. Same as *to'-bai-ba-bi*, q. v.
ti'-ba-ûn-gop. Pine cone; cone of Pinus monophylla.

ti'-ba-wa-na-ma-tsa-mo-gi. ? Euphorbia schizoloba.

ti'-ba-wa-ra. Pinus monophylla. Piñon Pine.

ti'-bo-hi. Taraxacum officinale Weber. Dandelion.

tĭ'-da-kai-mi-ya. Vaccinium cæspitosum Michx. Bilberry.

tĭ'-da-pa-wa-gûmp. Aquilegia cærulea James. Columbine. See *pa'-wa-gûm-pi.*

tĭ'-da-ya-gûp. Helenium autumnale L. and hoopesii Gray. Sneeze-weed. Cf. *mo'-ta-qa* and *toi'-ya-mu-ta-qa.*

tĭ'-mai-hya. See *tĭ'-nai-hya.*

tĭm'-bai-na-tsu. General name for medicines used in sexual diseases or for plants furnishing such medicines.

tĭm'-bai-wi-gûn-dza. Parnassia parviflora DC. Grass of Parnassus.

tĭm'-bai-wi-gûn-ta. See *tĭm'-bai-wi-gûn-dza.*

tĭm'-bi-ma. See *tĭm'-bo-ûmp.*

tĭm'-bi-mo-a-gwa-nûp. Aplopappus macronema Gray and parryi Gray.

tĭm'-bo-ip. Heard occasionally for *tĭm'-po-tĭm-bo-i-ûmp* and applied generally to various other plants growing on cliffs and over rocks. Arenaria biflora. Sandwort. Comandra pallida DC. Bastard Toad-flax, etc.

tĭm'-bo-ûmp. See *tĭm'-pĭn-tĭm-bo-i-ûmp.*

tĭm'-pi-dza-na-kwo. Senecio, several species; the latex of Groundsel, which was used for preparing chewing-gum.

tĭm'-pĭn-ba-bu-ip. See *tĭm'-pĭn-pa-bo-i-ûp.*

tĭm'-pĭn-pa-bo-i-ûp. Polytrichum juniperinum. Moss. Cf. *pa'-oñ-gop.*

tĭm'-pĭn-pa-gi-gĭp. Juncus parryi Engelm. Bog Rush. Cf. also *pa'-hwap.*

tĭm'-pĭn-so-kûp. General name for lichens.

tĭm'-pĭn-tu-nûmp. Kalmia glauca Ait. American Laurel.

tĭm'-pĭn-tĭm-bo-ûmp. Spiræa cæspitosa Nutt.

tĭm'-pi-sa-gwûp. Silene acaulis L. Catchfly.

tĭm'-pi-sa-wap. ? Linum kingii. Flax.

tĭn'-ä-bĭp. Poa californica Munro. Meadow Grass. Cf. *ni'-a-bĭp.*

tĭ'-nai-gop. Urtica holosericea Nutt. Nettle.

tĭ'-nai-hya. Also *tĭ'-mai-hya.* Mountain Tea.

tĭn'-go-ip. See *tĭn'-gwip.*

tĭn'-gwip. Chamæbatiaria millefolium Maxim. ? Holodiscus discolor var. dumosus.

tĭn'-ta. Carum carui.

tĭn'-tsĭñ-ga. Cnicus drummondi Gray. Plumed Thistle. Cf. also *tsĭñ'-ga.*

tĭ'-sas. Erigeron glabellus Nutt., var. Fleabane.

tĭ'-so-nĭp. Phleum alpinum L. Cat's-tail Grass. Alopecurus aristulatus Mx. Foxtail Grass.

ti'-ûm-pi. Amelanchier alnifolia Nutt. Service-berry.

ti'-wa-bi-nĭp. Elymus canadensis L. Wild Rye. Cf. *o'-ro-rop.*

tĭ'-ya-gûp. Helenium autumnale L. and hoopesii Gray. Sneeze-weed. (From *tĭ'-da-ya-gûp*, q. v.)

to'-bai-ba-bi. Bromus breviaristatus Thurb., etc. Brome Grass. Cinna arundinacea var. pendula Gray. Reed Bent Grass.

to'-bai-bi. See *to'-bai-ba-bi.*

to'-dzûp. Ferula multifida Gray.

to'-go-ûn-go-na. Castilleja parviflora Bong., minor Gray. Indian Paint-brush.

to'-ho-bai-bi. See *to'-bai-ba-bi.*

to'-ho-bi. Same as *to'-bai-ba-bi*, being a shortening of the preceding form.

to'-ho-bi-so-nĭp. Same as *to'-ho-bi*, + *so'-nĭp*, grass.

toi'-dĭ-sas. See *toi'-ya-dĭ-sas.*

toi'-gû-pa-gûnt. Eriogonum villiflorum. Plantago eriopoda Torr., patagonica Jacq., etc.

to'-ĭmp. Typha latifolia L. Cat-tail.

toi'-ya-ba-bwip. See *toi-ya-ba-o-pi.*

toi-ya-ba-ga-nûp. See *toi'-ya-ba-gwa-nûp.*

toi'-ya-ba-gwa-dzûp. Hydrophyllum occidentale Gray, capitatum. Waterleaf.

toi'-ya-ba-gwa-nûp. Lophanthus urticifolius Benth. Dracocephalum parviflorum Nutt. Dragon-head. Scutellaria sp. Skullcap. General term for these closely related labiales, the seeds of all of which were gathered and used for food in the same manner.

toi'-ya-ba-gwo-no-gĭp. Actæa spicata L. Baneberry.

toi'-ya-ba-hwip. See *toi'-ya-ba-o-pi.*

toi'-ya-ba-o-pi. Aplopappus suffruticosus Gray, macronema Gray.

toi'-ya-bĭn-da-tsĭp. Jamesia americana Torr. and Gray. Symphoricarpos oreophilus Gray. Snowberry.

toi'-ya-bĭ-tûm-ba. See *toi'-ya-bĭ-tûm-ba-ga.*

toi'-ya-bĭ-tûm-ba-ga. Valeriana edulis Nutt.

toi'-ya-bo-go-nûp. Ribes oxycanthoides L. Currant.

toi'-ya-da-ti-bu-da. ? Primula parryi Gray. Primrose. ? Poly-

gonum viviparum L. Gnaphalium sprengelii Hook. and Arn. Cudweed.

toi'-ya-da-ti-go-ra. Erigeron glabellus Nutt. Fleabane. Cf. under Erigeron in preceding list.

toi'-ya-da-tsĭp. See *toi'-ya-bĭn-da-tsĭp.*

toi'-ya-dĭ-sas. Chrysopsis villosa Nutt. Golden Aster.

toi'-ya-gwa-nûp. Saxifraga nivalis L. Saxifrage. Parnassia parviflora DC.

toi'-ya-mo-gûp. See *toi'-ya-mo-ha-gûp.*

toi'-ya-mo-ha-gûp. Anemone multifida Poir. Wind-flower.

toi'-ya-mo-ta-gomp (*-komp*). Mertensia alpina Don. Lungwort.

toi'-ya-mu-ta-qa. Helenium hoopesii Gray. Sneeze-weed. Cf. *tĭ'-da-ya-gûp.*

toi'-ya-na-bo-gop. Argemone mexicana var. hispida Gray. Prickly Poppy.

toi'-ya-na-ti-bu-da. See *toi'-ya-da-ti-bu-da.*

toi'-yan-bo-gop. Same as *toi'-ya-na-bo-gop*, q. v.

toi-ya-no-tsu. Antennaria dioica Gaertn. Everlasting.

toi'-yan-tĭm-ba-dzap. Arenaria triflora var. obtusa Watson. Sandwort.

toi'-ya-o-gwĭp. Aristida purpurea Nutt. Triple-awned Grass. Cf. *o'-gwĭp* and *yo'-nĭp.*

toi'-ya-o-ro-rop. One of the grasses. "Mountain grass." Cf. *toi'-ya-so-nĭp.*

toi'-ya-po-go-nûp. Same as *toi'-ya-bo-go-nûp.*

toi'-ya-ra-ta-boi-ya. Gnaphalium sp. (? luteoalbum). Cudweed.

toi'-ya-ro-dzĭp. Sium cicutifolium Gmelin. Water Parsnip.

toi'-ya-sa-ton-dzi. Hedysarum or related form.

toi'-ya-si-wûmp. Festuca ovina var. brevifolia Watson. Fescue Grass. Deschampsia cæspitosa Beauv., var. Hair Grass.

toi'-ya-so-nĭp. Deschampsia cæspitosa Beauv. var. Hair Grass.

toi'-ya-ta-son-dzi. Same as *toi'-ya-sa-ton-dzi*, q. v.

toi'-ya-tĭm-ba-dzap. See *toi'-yan-tĭm-ba-dzap.*

toi'-ya-wañ-go-gĭp. ? Ivesia gordoni Torr. and Gray.

toi'-ya-wint-a-mu-ta-qa. See *toi'-ya-mu-ta-qa*, the commoner form.

toi'-ya-wĭ-tûm-ba. See *toi'-ya-bi-tûm-ba-ga*, from which this is shortened.

toi'-ya-wĭ-tûm-ba-ga. Erythronium grandiflorum Pursh. Dog-tooth Violet. The full form is probably *toi'-ya-wun-tum-ba-ga* (*toi'-ya-wĭnt*, canyon). Contrast *toi'-ya-bĭ-tûm-ba-ga* (*toi'-ya-bi*, mountain).

toñ'-gi-cip. Prunus demissa Walpers. Choke-cherry. Cf. *to'-o-nûmp.*

to'-no-pi. One of the "greasewoods."

to'-o-nûmp. Prunus demissa Walpers. Choke-cherry. Cf. *toñ'-gi-cip.*

to'-pai-ba-bi. See *to'-bai-ba-bi.*

to'-pai-bi. Shortened from *to'-pai-ba-bi.*

to'-sa-na-tsu. A *koi'-na-tsu* prepared from or consisting of the roots of Heuchera rubescens Torr. and related species and of species of Mitella, which see in the preceding list. Sometimes applied to the plants themselves.

to'-sa-wu-da. Astragalus utahensis T. and G.

tsĭ'-gi-tûmp. Œnothera biennis L. Evening Primrose.

tsĭ'-na. See *tsĭñ'-ga-bo-gop.*

tsĭ'-na-bo-gop. Cnicus drummondi Gray. Plumed Thistle. Cnicus undulatus Gray.

tsĭñ'-ga. See *tsĭñ'-ga-bo-gop.*

tsĭñ'-ga-bo-gop. Cnicus drummondi and undulatus Gray. Plumed Thistle. Form preferable to its equivalent, *tsĭ'-na-bo-gop.*

tsi'-o-pi. Rosa californica and fendleri Crepin. Rose.

tsi'-ûmp. Berries of Rosa californica and fendleri Crepin.

tso'-hamp. Amsinckia tessellata. Also by some used as equivalent of *tso'-ni-baip*, q. v.

tsom'-ba. Same as *tsom'-bai-bi.*

tsom'-bai-bi. Same as *tso'-ni-baip.*

tso'-nap. Same as *tso'-ni-baip.*

tso'-ni-baip. Lithospermum pilosum Nutt. and multiflorum Torr. Gromwell. Echinospermum redowskii Lehm., floribundum Lehm., etc. Stickseed.

tu'-go-wa-tsĭp. Chrysopsis villosa Nutt., etc. Golden Aster.

tu'-go-wi-nûp. Pentstemon confertus Dougl. var.

tu'-hi-nûp. Cercocarpus parvifolius Nutt.

tu'-i. Urtica sp.

tu'-ku-ba-gûmp. Delphinium bicolor Nutt. and menziesii DC. Larkspur.

tu'-kwûn-da-mi. See *tu'-kwûn-dau-wi-a.*

tu'-kwûn-dau-wi-a. Rubus leucodermis Dougl. Raspberry.

tu'-na. Cymopterus montanus Torr. and Gray.

tu'-nam-pi. Cercocarpus ledifolius Nutt. Mountain Mahogany.

tu'-nûmp. Same as *tu'-nam-pi.*

tu'-pam-pi. See *tu'-ro-vi-pam-pi.*

tu'-ro-pam-pi. Shortened from *tu'-ro-vi-pam-pi*, which see.

tu'-ro-sip. Ambrosia psilostachya DC. Ragweed. Iva axillaris Pursh.

tu'-ro-vi-pam-pi. Rudbeckia occidentalis Nutt. Cone-flower.

tu'-si-gĭp. Epilobium coloratum Muhl. Willow-herb.

tu'-tom-pi. A shrubby plant mentioned by Indians but not identified by the author.

U.

u'-di-ûp. Betula occidentalis Hook. Birch.

u'-gai-gût. Poa sp.

u'-gu-dzûp. Alnus incana Willd. Alder.

u'-gû-pi; u-gûp. Beckmannia erucæformis Host. Slough Grass.

u'-i-tcĭb. See *ai'-tcĭb.*

u'-na-tso-mo-gi. Humulus lupulus L. Hop. Cf. *wa'-na-na-tso-mo-gi.*

u'-sa. Epilobium alpinum L. Willow-herb.

W.

wa'-bi. Melica poæoides Nutt. Melic Grass.

wa'-da. Suæda depressa Watson. Sea-blite. Artemisia biennis Willd. In the latter case for *pi'-a-wa-da*, which see.

wa'-da-bu-ĭp. Lemna sp. Duckweed.

wa'-don-dzĭp. Agropyron repens Beauv. Blue-joint. See also under Agropyron in the preceding list.

wai. Oryzopsis cuspidata Benth. Mountain Rice.

wai'-a-na-tsu. General term for medicines used for burns or for plants producing such medicines.

wai'-ûmp. Probable form for *wai*, but only rarely heard.

wa'-na-gûnt. Potentilla fruticosa L. Five Finger. Cf. *wa'-tsi-gûnt.*

wa'-na-ma-tsa-mo-gi. See next word.

wa'-na-na-tsa-mo-gi. Humulus lupulus L. Hop.

wa'-na-tsi-mu-gi. ? Brickellia grandiflora var. minor Gray.

wan'-di-wa-sĭp. See *wan'-di-wa-sûmp.*

wan'-di-wa-sûmp. Epipactis gigantea Dougl.

wan'-dzi-baip. Eleocharis palustris R. Br. Spike Rush.

wañ'-gĭn-gĭp. Chænactis douglasii Hook. and Arn. Cf. *ko'-si-bo-qûn-tos.*

wañ'-go; wañ'-go-bi. Pseudotsuga douglasii Carr. Douglas Spruce. Cf. *añ'-go-bi.*

wañ'-go-gĭp. Achillea millefolium L. Yarrow.
wa'-nûp. Humulus lupulus L. Hop. Cf. *wa'-na-na-tsa-mo-gi.*
wa'-pi; wap. Juniperus californica var. utahensis, etc. Cedar; Juniper.
wap'-ûm-pi. Cedar berries; fruit of Juniperus californica var. utahensis.
wa'-si-pĭt. Silene acaulis L. Catchfly. See also *tĭm'-pi-sa-gwûp.*
wa'-tsi-gûnt. Potentilla fruticosa L. Five-finger. Cf. *wa'-na-gûnt.*
wa'-tsĭp. Bark.
wi'-a-kĕn-dzĭp. Balsamorrhiza hookeri Nutt.
wi'-djan-gwo-djop. Arenaria triflora var. obtusa Watson. Sandwort. Cf. *toi'-yan-tĭm-ba-dzap.*
wi'-gon-dzĭp. ? Ranunculus sp.
wi'-gûn-dza. Heuchera rubescens Torr. Alum-root.
wi'-kûn-dza. See *wi'-gûn-dza.*
wi'-na-go. Fritillaria pudica Spreng. Lily; Yellow Bell.
wi'-nau-tsaug. A gum or mucilage prepared from Malvastrum munroanum and used on the inside of earthen vessels as a filling. Also the name is sometimes applied to the plant itself.
wĭ'-sa-po-go-nûp. Ribes divaricatum Dougl. Currant.
wĭ'-sa-po-gûmp. Same as *wĭ'-sa-po-go-nûp.*
wi'-tcûb. Trisetum subspicatum Beauv.
wi'-ûm-pi; wi-ûmp. Cratægus rivularis. Haws.
wu'-bu-i-nûp. Lepidium medium Greene. Peppergrass.
wu'-da-ûn-dĭ-kûp. A somewhat general term applied to a number of plants which are eaten or the fruit of which are eaten by bear. Such are Lonicera, Smilacina, etc., which, of course, have in addition their more special designations. See under the respective names in the preceding list.
wu'-da-wa-nûp. Apocynum androsæmifolium L. Indian Hemp; Dogbane.
wu'-si-bĭñ-gûnt. Phacelia menziesii Torr. and circinata Jacq.
wu'-si-gûnt. Same as *wu-si-bĭñ-gûnt.*
wu'-pi. Wood; woody plant; stick, etc. Cf. *o'-pi.*

Y.

yamp. See *yam'-pa.*
yam'-pa. Carum gairdneri Benth. and Hook.
yam'-pa-gwa-nûp. Erodium cicutarium L'Her. Alfilaria; Crane's-bill.

yo'-go-ta-ma-nûmp. Smilacina amplexicaulis Nutt. False Solomon's Seal.

yo'-go-ti-wi-ya. Silene menziesii Hook. Catchfly.

yo'-go-ti-wi-yu. See the preceding word.

yo'-ni-co-nĭp. See *yo'-ni-so-nĭp.*

yo'-nĭp. Aristida purpurea Nutt. Triple-awned Grass. Cf. *o'-gĭp.*

yo'-ni-so-nĭp. ? Deschampsia danthionoides Munro. ? Hair Grass. Glyceria distans Wahl. Manna Grass. Festuca tenella Willd. Cf. *yo'-nĭp.*

POTTERY OF THE PAJARITO PLATEAU AND OF SOME ADJACENT REGIONS IN NEW MEXICO

BY

A. V. KIDDER

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POTTERY OF THE PAJARITO PLATEAU AND OF SOME ADJACENT REGIONS IN NEW MEXICO

By A. V. KIDDER

Introduction

THE Pajarito plateau to the west of the Rio Grande in Sandoval and Santa Fé counties, New Mexico, is very rich in archeological remains. Although the location and general appearance of its ruins have been ably recorded by Bandelier[1] and Hewett,[2] no adequate description of the pottery found in and about those ruins has yet been published.[3] Because of this, each new investigator has been without any hint as to what sort of pottery he might find in his region, or what he might reasonably infer from what he did find. Hence, much valuable evidence has undoubtedly been overlooked because of ignorance of its possible meaning. The finding, for example, of sherds of a certain type in a certain section of a ruin might be a discovery of the last importance, but it would hardly be recognized as such, and therefore not properly recorded, unless the investigator had a general knowledge of the distribution of the wares outside the immediate zone of his activity. Such a knowledge is not to be had in any published work, a very severe handicap to successful field and museum practice.

The present brief summary is intended as a start toward remedying this condition. It is, however, based on incomplete data, there being many ruins as yet unrepresented in our museums, nor have I had the opportunity of examining all the available collections. For this reason, it seems wisest to

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[1] "Final Report," *Papers Arch. Inst. Am., Am. Series*, Vol. 4.

[2] "Antiquities of the Jemez Plateau," *Bull. 32, Bur. Am. Ethnol.*

[3] A summary treatment of the subject is given by Hewett in *Communantés Anciennes dans le Désert Américain* (Geneva, 1908), p. 90.

present merely a short description of the known wares and not attempt to draw any final conclusions.

The ruins may be divided into two general classes: small scattered dwellings and large pueblos. There is, however, a more fundamental difference between the two than mere size, for the pottery of the small houses is entirely unlike that of the larger groups. Very little is known about the architecture or groundplans of these small ruins as no one of them has yet been excavated. They appear as inconsiderable mounds of fallen building stones or of adobe from disintegrated walls and seldom seem to have contained more than ten or a dozen rooms. There are numbers of them in most parts of the plateau suitable for human habitation that have so far been investigated. Little notice has been taken of them by archeologists, so that it is not possible to determine their exact range or to say whether or not they present any local peculiarities.

The larger groups are great aggregations of rooms, sometimes built of adobe, but more commonly of stone. While they cover considerable amounts of ground, an examination of their foundation walls and an estimate of the fallen building material in their rooms gives one the impression that they could never have been over two or possibly three stories in height. Their masonry is uniformly poor, little care having been taken in the shaping of the stones, which, moreover, were laid up with more adobe mortar than is compatible with permanency. As is well shown in the diagrams given by Bandelier[1] and Hewett,[2] the groundplans of these groups follow no very strict canons. There is, however, a general tendency to enclose a central court or plaza containing one or more circular kivas.

Between the very large and the very small there are found ruins of intermediate size, some of which appear to be allied to the one class, some to the other, while still others may perhaps be culturally intermediate. This question cannot be discussed until we have assembled our ceramic evidence.

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[1] Loc. cit.—Frontispiece.

[2] Loc. cit.—Plates.

POTTERY OF THE SMALL RUINS

As none of these groups have been excavated, we have no whole pottery from them and this description is therefore based on collections of potsherds from the surface of a number of sites on the Pajarito itself and in the neighborhood of the city of Santa Fé.[1] The wares represented are the black-and-white, the red-and-black, and the corrugated.

BLACK-AND-WHITE WARE

The black-and-white preponderates. In general technique it much resembles the black-and-white found elsewhere in the Southwest. Such features as differences in shape, zones of decoration, and treatment of the design elements, which serve to distinguish Mesa Verde black-and-white pottery from that of Chaco cañon; Kayenta from Tularosa, etc., cannot be made out with certainty from such small sherds as are here available. It can be said, however, that this ware surely does not belong to the Mesa Verde or Kayenta groups; and that while it is quite as surely not an integral part of the Tularosa or Chaco divisions, it seems to show certain affinities to each of them.

The sherds have a dark gray paste, remarkably homogeneous and fine. It is unusually compact, the lines of fracture being almost as straight and sharp as those of kiln-burned crockery. Very little tempering material appears, but where present, it consists of tiny angular particles of some dark rock, apparently basaltic, with occasional bits of water-worn quartz, averaging about 1 mm. in diameter. The slip is very thin, considerably softer than the paste and is ordinarily little lighter than it in color. As in a few sherds, however, the slip is a clear white, it is possible that the dark appearance of the majority of the pieces is due to exposure to the elements. The surface is well smoothed down, probably with a wooden or gourd-rind tool which has left faint parallel striations scarcely visible to the naked eye. The surface is generally dull, the fine glossy finish produced by the rubbing stone being very unusual.

[1] On the Plateau: Ancho, Water, and Frijoles cañons. Near Santa Fé at Agua Fria and at Fort Marcy.

The paint of the decoration is uniformly a slaty black color. As in all other black-and-white groups, there are occasional examples in which the black paint, through some accident of composition or firing, is turned to a rusty red-brown.

An extraordinarily high percentage of basket-marked sherds is found at the small house ruins. Such sherds occur, it is true, in most other black-and-white groups, but they are of the greatest rarity. Here, however, they can be picked up at almost any site. The impressions show that bowls and the lower parts of ollas were often formed in baskets. In these cases the clay was apparently coated on the inside of the basket and pressed down hard enough to render the marks of the weave sharp and clear. The upper parts of ollas were probably constructed by the regular coiling method. Some bowls, however, seen to have been molded or cast entire in basket forms, as the impression of the weave runs to the rim. The baskets themselves were all of the coiled variety, tray or bowl-shaped; the coils measure 4 to 5 mm. in breadth and there are about six stitches to the centimeter (plate XIV).

The common black-and-white vessel shapes are: bowls, ollas, and ladles. The bowls, as nearly as can be made out from the sherds, were fairly small, from 18 to 30 cm. in diameter for normal examples, the ware being from 4 to 6 mm. in thickness. They seem to have had flattish bases and rather abruptly rising sides. The rim is never thickened, is rounded off or sharp, and, with the exception of two or three examples from Ancho cañon which are curved outward, always rises evenly to its termination without flare or constriction.

In many cases the slip is applied only to the interior and the exterior is left in the dark gray paste; sometimes it is run over the rim and carried part way down on the exterior;[1] and now and then a sherd indicates that the entire exterior has been slipped. Decoration is normally strictly confined to the interior.

Of ollas very little can be said. I have seen only small fragments, none large enough to give any basis for reconstruction.

[1] This is a feature commonly found in Chaco cañon bowls.

They are of much heavier ware than the bowls (7 to 8 mm.) and bear handles of the loop variety. From the angle at which the handles are set against the body, it would seem that they had the same downward rake as those of Mesa Verde and Montezuma creek ollas.[1]

Ladles are of the "bowl-and-handle" type. I have seen no examples of the "half-gourd" style. One fragment in the Peabody Museum collection may have come from a high necked pitcher similar to those of Chaco cañon,[2] and another is perhaps from a canteen like those of Mesa Verde.[3]

Black-and-white ware decoration is strictly geometric. Designs, however, on the small fragments available can so seldom be made out with certainty that an analysis or characterization is quite impossible. Certain decorative elements and design arrangements typical of the better known black-and-white groups certainly do not occur, but there are many figures and combinations found here that are to be seen in one or other of them. Our knowledge of the distribution of black-and-white designs is unfortunately very vague, as most writers have lumped all the groups together and in publishing collections have selected for illustration the most striking and unusual pieces, neglecting the common, typical, and therefore most important specimens. I do not attempt therefore a classification, but give a number of drawings of designs (plate XV).

REDWARE

I have found bits of this pottery at all the small ruins where I have made a careful search, but it is common at none of them. Technically it is inferior to the black-and-white, is soft, more friable and has a much less homogeneous paste. In cross-section the pieces are dark gray, becoming yellow or red toward the surfaces which are covered by a rather heavy slip of fine rich Indian red. The tempering material is apparently the same as in the black-and-white, but is considerably more

[1] Cummings, *2d Archeological Bulletin, University of Utah*, p. 38.

[2] Pepper, *Putnam Anniversary Volume*, p. 220, pl. XIII.

[3] Fewkes, "Sprucetree House," *Bull. 41, Bur. Am. Ethnol.*, pl. 20, *b*.

profuse. The decoration is in dull black paint which has no more luster than the surfaces upon which it is applied. All the pieces of redware which I have seen are from bowls with unthickened flattish rims. The finish is rather better than in black-and-white; the rubbing stone seems to have been used, but without producing a true gloss. While no whole designs can be made out, the decoration is plainly as severely geometric as is that of the black-and-white; hachure, angled, and stepped figures are commonly employed.

There is a sherd from Ancho cañon which does not conform to this type.[1] It is from the upper part of a bowl with outcurved rim. The exterior is well smoothed, clear red, and the interior nearly to the lip has a glossy black, almost polished surface. This, of course, very strongly suggests the bowls of the upper Gila.[2]

CORRUGATED WARE

Corrugated ware is the well-known indented type which has so often been described from other regions. As elsewhere it is made of coarse gray clay with much gross tempering and occasionally a slight admixture of mica. While the examples from the Pajarito do not offer any striking peculiarities which can serve to distinguish them from the general run of corrugated ware throughout the northern and eastern part of the Southwest, their quality is distinctly below the average. The coiling as a whole is not very evenly accomplished and the indentations are seldom sharp and clear; the latter were often made with the thumb tip, in which cases the nail marks and the skin-ridge impressions are visible. The coils and indentations are frequently almost obliterated as if the pieces had been wrapped in a skin or cloth before the vessel was thoroughly dried. Large round-bodied jars with large orifices seem to have been the prevailing forms.

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[1] Peabody Museum Cat. No. 81837.

[2] Hough, "Antiquities of Gila-Salt Valleys," *Bull. 35, Bur. Am. Ethnol.*, p. 25.

POTTERY OF THE GREAT RUINS[1]

PAJARITAN POTTERY

This very distinct group of wares may be called for convenience sake Pajaritan, because the Pajarito plateau, although merely one of the regions where it is found, has given us most of our available study collections; also because the Pajaritan potters seem to have been singularly expert in the handling of the characteristic techniques. I shall, therefore, describe the salient features of Pajaritan pottery as the best known single group in order that it may be used as a standard with which to compare like wares from other localities.

Pajaritan ceramics differ from all others of the Southwest in technology and decoration. We have, to begin with, at least four wares only found in this group, three of which have decorative systems peculiar to themselves.

The wares are as follows: red and glaze, biscuit, incised, black.

REDWARE

The redware is firm, solid, and dense; though fairly hard, it is less so than the average black-and-white pottery of the same region and can be scratched rather more easily with a steel point. The paste varies greatly in color according, apparently, to the degree of heat applied to it in burning. The usual shades are reddish, tending in some cases towards yellows and grays. Tempering is either quite absent or consists of fine structureless gray particles, ¼ to ⅓ mm. in diameter which have the appearance of pulverized potsherds. Visible surfaces of all vessels are coated with a red slip of very smooth texture,[2] the normal color of which is a clear rich brick red that turns on

[1] The vessels and fragments upon which this study is based were taken from the following ruins: Puyé, Tyuonyi, Yapashi (Stone Lions), Tschirege, Otowi and Tsankawi. The excavations were made by Dr Hewett assisted, during two seasons, by the author. The collections are now in the National Museum, New Mexico State Museum, and Peabody Museum. The author is greatly indebted to Dr Hewett for permission to describe and figure vessels collected by him.

[2] Ferric oxide, Fe_2O_3, according to analysis at the Harvard University Laboratory.

overfiring to brown or fawn. The glazed paint is really the distinguishing feature of this class. The pieces were decorated with a black pigment in which there was evidently mixed a flux that produced, in firing, a vitrification of the lines of the ornament. With the exception of one small piece mentioned by Hewett,[1] the glaze has never been found to cover the entire surface of any vessel. Analyses by two advanced students of chemistry in the Harvard laboratories, made under the direction of Drs. Forbes and Clark, showed the glaze to be a silicate of lead, colored with iron and manganese.[2]

The glaze varies a great deal both in consistency and in luster. The lines are sometimes very irregular and "running" and again sharp and clear. As to luster, the paint is often dull or "crusty," having entirely failed to "take." Between this and fine, glossy, more or less iridescent, glaze, there are all stages, the two being sometimes found on the same pot. These differences are undoubtedly due to the composition of the mixture and the accidents of firing; no change seems ever to have been brought about by exposure or the action of humus acids.

In general, it may be said that the Pajaritan glaze paint could not be made to produce na row lines, or, in most cases, lines of any great sharpness or accuracy of outline. This fact must obviously have had a great influence on the selection of designs and on their development; as certain features, such as hatching, small figures, and the like, could not be drawn. It would have been an impossibility to approximate even, in Pajaritan glaze, such ornamentation as is found on the black-and-white pottery. Many designs are so confused by the running and spreading of the glaze as to be quite illegible. These conditions must have tended toward the production of large figures, and the elimination of detailed intensive embellishment such as is the rule in the older black-and-white ware

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[1] *Communantés Anciennes*, p. 83.

[2] Hewett states (loc. cit., p. 83) that the glaze is a salt product, made by painting over the decorative lines with a solution of salt in water. Further chemical researches are necessary.

and in the contemporaneous biscuit. The emphasis would naturally be thrown on mass and color. Beginnings of this feeling are seen in the red and white fillings which appear in Pajaritan ceramics. Red fillings are much commoner than white, and a consideration of them is not without interest. The red is a heavy pigment of a rather brighter and richer color than the slip. It was applied before the glaze lines, which were afterward drawn around it. This is proved by the many instances where the glaze overlaps the red. The exact color of the slip must have been more or less a matter of chance, depending on the degree of heat developed in firing. While in some cases the slip is so nearly the color of the red filling that there is difficulty in deciding whether or not the latter is present, there is usually a distinct but harmonious contrast. This is particularly the case where the slip is of a yellowish or brownish tinge; it is on pieces of these colors indeed that the red filling is most frequently found, so that it seems probable that the potters had at least some idea of the approximate final shade of their wares. As the red fillings were applied first, they must have been painted on with the ultimate decorative scheme well in mind. Any error would produce an unsightly variation which would have to be outlined in glaze. This may perhaps have had an influence on the development of designs. As a possible morphological factor it should, I think, be considered.

BISCUITWARE[1]

This pottery, so characteristic of the ruins of the Pajarito and of the northern Rio Grande culture as a whole, is distinguishable from all other light-colored wares by its peculiar yellowish and grayish tone and by its lightness and softness. The paste is usually yellowish gray, homogeneous in structure, somewhat granular, and in most specimens a trifle porous. The majority of sherds contain no tempering material, but where it does occur, it consists, in all the pieces that I have examined, of bits of water-worn quartz ¾ to 1 mm. in diameter.

[1] The term "biscuitware" is mine. It is applied because of the light, porous nature of this pottery.

The visible surfaces of all vessels are coated with a slip varying in color from almost lemon yellow to dark gray. A light gray is perhaps the commonest shade; pure white is never seen. While the slip is apparently incapable of taking a high polish, it was evidently always worked over with the rubbing stone. The decoration is in sharp, clear, black paint, much less variable in color than that of black-and-white ware; it is quite lusterless and therefore entirely distinct from the glaze paint of the red-ware. Although I have not yet had it analysed, I suspect it to be of vegetable origin.

Biscuitware is much softer than either red or black-and-white; some pieces can be scratched with the finger nail and all may readily be carved with a sharp knife. The ware is very thick, but it is so light that a vessel of biscuit and one of red, both of the same size, are approximately equal in weight.

INCISED WARE

This third characteristic Pajaritan ware is technically closely allied to the biscuit. The paste is, according to the magnifying glass, the same; like biscuit it is seldom tempered and it has the same lightness and softness. Unlike biscuit, however, the pieces are always thin. I have not been able to find any example that bears a true slip, the surfaces appear to have been left in the paste and are, accordingly, quite uniformly dull gray. In a few cases, however, a sort of micaceous wash seems to have been applied to the vessels after they had been finished and decorated, but before firing. The ornament consists of rectilinear geometric designs of uniform style. The lines were made by the so-called "trailing method" with an implement having a blunt point 1 to 2 mm. wide. Occasionally, punctate ornamentation appears in the form of rows of dots or dashes; there is a single sherd from the Oso basin in the State Historical Society collection, Colorado Springs, that shows a line of thumb prints.[1]

BLACKWARE

Rough black is the ordinary cooking ware of the region, as is indicated by the heavy coating of soot found on the pieces.

[1] Collected by Jeancon.

It is made of a poor grade of clay, often very full of sand or even tiny quartz pebbles and is seldom even carefully smoothed on the exterior. The coil, with which, of course, all the Pajaritan pottery was made, is seldom left intact on the blackware as was done in the case of the corresponding culinary pieces in many other regions. Where the coil does appear it is merely indicated by a faint ribbing on the surface and it was very rarely, if ever, notched to give the well-known corrugated effect so characteristic of the black-and-white group.

Micaceous black should be classed, perhaps, as a subdivision of the black pottery, and indeed it is the same in general technique, having the poor clay, rough exterior, and occasional semi-obliterated coils. It differs in that it contains a considerable admixture of finely ground mica, and furthermore there is sometimes added to the outer surface a micaceous wash. This gives it a grayish, and in extreme cases, a silvery appearance. However, the mica seems to have had a deleterious effect upon the ware; it so rots in the ground, that it scales at the least touch and for this reason no whole piece, as far as I know, has ever been excavated.

SHAPES

A lack of exuberance, if such a term be admissible, is seen in the pottery shapes of the Pajarito. There are a few simple, well-defined forms from which there is comparatively little variation. To this simplicity and standardization may perhaps be due that beauty of line which manifests itself in all the vessels of the region.

Pitchers, ladles, mugs, and seed-jars, all familiar types in other localities and found to a certain extent, at least, in the local black-and-white, do not occur; while only one new shape, the so-called "prayermeal bowl," appears. The first three of the lacking forms are all handled vessels, and it is a peculiarity of Pajaritan pottery that handles are not conventional on any form. A few fragments of handles have been found at Puyé; they seem to have belonged to pieces of eccentric shape, small cups and the like, forms which are not standard in the region.

It may be that the clays with which the Pajaritans chose to work, or the processes of firing with which they were familiar, were not favorable to the making of dependable handles.

REDWARE

OLLAS.—Ollas are characterized by their flatness, the diameter being usually from ⅓ to ½ greater than the height. The underbody is gracefully curved and the bottom may or may not be convex. The upper body is fairly flat and the orifice large. The most common shape is that shown in plate XVI, figs. 1 and 2, where there is very little differentiation in angle between the body and the neck. The red slip which covers the exterior is carried down only a short distance into the interior, the rest of that surface being left in the yellowish base clay, only partly smoothed. Decoration is confined to the upper body and the neck. Usually there is a band about each, the two separated by a series of lines. A constant characteristic of redware ollas is a slight flare of the lip of the orifice (see plate XVII, fig. 8).

BOWLS.—Plate XVII, figs. 1, 2 and 3, shows redware bowls from the Pajarito region. Fig. 3 is a very distinct type which is found in all the larger Pajarito ruins, most commonly, perhaps, at Puyé. It is called the "olla bowl" because of its somewhat restricted aperture. The ordinary bowls have a very uniform shape, full rounded bottom with rim which tends to turn in somewhat at the top. The bowls are neither shallow nor deep, for while they are not as flat as biscuitware bowls they are still in the "less than hemispherical" class, averaging about 26 cm. in diameter by about 10 cm. in depth. The structure of the rim itself is noteworthy, it is thickened considerably on the inner side just below the edge.[1] This makes a ridge which must have been very useful as a "stop" to keep liquids from slopping out of the bowl.

THE DECORATIVE ZONES OF REDWARE BOWLS.—(Plate XVII, figs. 1 and 2.) The *exterior* is always decorated from a little below the rim to the upper part of the undercurve, some-

[1] See plate XXVII, fig. 6.

times with a band with framing lines; sometimes with a series of repeated independent units. Interior decoration may consist of: first, a band under the ridge of the rim, leaving a fairly large, clear circle in the bottom, which again may have a symbol in it; or, second, the whole interior may be taken up with decoration.

OLLA BOWLS.—(Plate XVII, fig. 3.) Decoration is confined to the upper part of the exterior. There is no interior decoration although that surface is slipped and polished as in ordinary bowls. There are two known examples of bowls of this type that are provided with spouts.[1] This is a feature unique in the Southwest. Both are from Puyé. (Plate X, fig. 6.)

"PRAYERMEAL BOWLS."—(Plate XVII, figs. 4 and 5) are small, square or rectangular dishes, with straight sides which are either perpendicular or slightly outside the perpendicular. They are rarely over 10 cm. in length and 4 cm. in depth. The long sides are frequently terraced. Decoration is on the exterior of all four sides and on the interior bottom.

OTHER REDWARE FORMS.—There is a canteen in the New Mexico Historical Society collection. It is of redware with typical glazed ornamentation and appears to be ancient. Its provenance is unknown. A sherd from a smaller though similar canteen was found at Puyé. Sherds of one or two eccentrically shaped pieces have been picked up, but these are of the greatest rarity.

BISCUITWARE

OLLAS.—The ollas of this ware are very seldom recovered in perfect condition as they were apparently never buried with the dead, and in house ruins they are found broken into many fragments, making collection and restoration difficult. From the sherds, however, and from the few perfect or restored specimens now in museums, it would seem that the biscuitware olla is taller than the red and has more neck (plate XVI, figs. 3 and 4). In their zones of decoration, the biscuit ollas also

[1] See Hewett, *Communantés*, pl. XV, fig. g. The second example is a fragment in the New Mexico Museum.

differ from the red. The neck design, usually a band in the latter, often takes, in biscuit ollas, the form of three, or more commonly four, independent repeated units. (Plate XVI, fig. 3). The body-bands occupy approximately the same positions, but festoons, dashes or zigzags (plate XVI, fig. 3) are sometimes applied to the underbody.

BOWLS.—Bowls may be roughly divided into two classes: (1) Small (17–23 cm. in diam.) with incurving rim (plate XVII, fig. 10). (2) Large (23–35 cm. in diam.) with straight rim (plate XVII, figs. 8 and 9).

Examples of Class 1 are deeper in comparison to their diameter than those of Class 2, but both classes are shallower than the redware bowls. Their depth is usually little more than one third of their diameter; they also average considerably larger than red bowls. A recurved bottom is frequently seen, particularly in large specimens.

The decorative zones are the same as in redware; the upper part of the sides, both interior and exterior. As in redware the design is usually in the form of a band, but may be replaced on the exterior by repeated units, and in the interior by a device covering the whole surface. Biscuit bowls are peculiar, however, in that they almost always bear ornamentation on the inner surface of the straight rim. This may consist of repeated small independent units, a zigzag line, a festooned line or some narrow decoration of that nature. (Plate XVII, fig. 9). The flat top of the rim itself is usually ticked at fairly wide intervals.

JARS.—Jars (plate XVII, fig. 11) seem to form a well-marked type intermediate between the bowl and the olla. They are small pots 12 to 17 cm. high and 20 to 25 cm. in diameter. Their rims are somewhat similar to those of bowls, but they are not decorated in the interior, the one ornamented zone being a broad band about the outside.

I know of no other biscuitware shapes, nor has there ever been found, I think, any sherd of an eccentric or otherwise extraordinary piece.

INCISED WARE

The only form of gray incised pottery that has yet come to light on the Pajarito is the olla. Perfect examples are so rare that I cannot say anything as to the type shape; plate XVI, figs. 5 and 6, shows two of the very few known. The decorative zones are bands about the body and lower neck.

BLACKWARE AND MICACEOUS WARE

I group these together as the shapes seem identical. As in the case of the gray incised we have little material to work with, but for a different reason. The gray is rare even in the form of sherds; but while the black, having been employed for the manufacture of cooking vessels, is correspondingly abundant, it is very friable, and because of its lack of beauty and the difficulty of distinguishing fragments of one pot from those of another, there being no designs to aid in the restoration, collectors have failed to recover any considerable number of specimens. In spite of the paucity of evidence, however, it is at once apparent that the black ollas are quite different in shape from the types just examined. They have full, round, bodies with no salient shoulder, very large orifice, and sharply flaring rim (plate XVI, figs. 7 and 8). The sherds show that some of them were of considerably larger size than any of the ollas of the other classes.

BIRD-SHAPED OR FOOT-SHAPED JARS.—The pieces of this form, so far recovered, have all been made of blackware, a fact which suggests that their shape may have had some practical culinary use. In other regions where this type occurs it is always decorated and is never of the coarser cooking ware. They exhibit very little naturalism, a slight protuberance on the elongated side being the only feature which even remotely suggests the life form. They lack the "wing knobs" or "wing ridges" seen elsewhere.[1]

This completes the list of standard Pajaritan shapes and there now remain to be considered reworked pieces of broken pottery. These occur in some abundance.

[1] See Hewett, *Communantés*, pl. XV, fig. j.

There are:

1. Sherds smoothed on the edges and worked into various forms; some for pendants and like objects of personal adornment; some for scrapers used in the manufacture of pottery.

2. Olla bottoms cut down to serve as small, shallow dishes or plates. Some of these show signs of having been employed as paint holders.

3. Tufa-filled pot molds. (Plate XIV, fig. 2.) These are very common in all the larger Pajaritan ruins, but are not found, as far as I am aware, in any other region. They were made from ollas which had become broken or worn through at the bottom. A cut was made around the shoulder, removing the broken base, and the upper part of the vessel was utilized as follows: the piece was turned upside down and rested on the neck (which was sometimes cut away to give a firmer stance). The orifice was then stopped up with a large potsherd, a mat, or a basket and the inside filled with a mixture of tufa and ashes. I think there is little doubt that these curious and ingeniously made articles were used for starting coiled vessels. They might also have served as braziers for carrying coals of fire, or possibly as trays for roasting nuts.[1]

General Technical Features

Redware with glazed ornament,	Ollas, Bowls, Prayermeal Bowls, Canteens.
Biscuitware with ornament in dull black,	Ollas, Bowls, Jars.
Gray incised ware,	Ollas.
Black and micaceous black,	Ollas, Bird-Shaped Jars.

Simple shapes and lack of handles; three distinct decorative systems for first, red; second, biscuit; third, incised; broken ollas reused as pot molds. Lack of good coiled ware and of

[1] See Cushing, "A Study of Pueblo Pottery as Illustrative of Zuñi Culture Growth," *4th Ann. Rep. Bur. Am. Ethnol.*, p. 484 and fig. 501.

such smaller handled receptacles as ladles, pitchers, and mugs. Lack of effigies and eccentric pieces.

DECORATION

BISCUITWARE[1]

Of the 260 designs that have been studied in preparing this paper, about 250 are taken from bowls. The rest are from ollas, and small jars. In most cases both interior and exterior decorations of each bowl were obtained.

The majority of the designs are of the band type; framed above and below by two, three, or four parallel lines, the topmost and bottom ones usually being heavier than the others (plate XVII, figs. 8 and 9). Beside the band form there are decorations which cover, more or less fully, the whole interior surface of bowls. With a very few exceptions these may be divided into three groups: whirling awanyus; cross figures; and hatched triangles depending from the rim. This last form also occurs on bowl exteriors where it approximates the band style.

BAND DECORATIONS

There seems to be no difference or correlation between the band decorations from the exterior and interior of bowls, or between the bands on bowls and those on ollas. Analysis shows the bands to consist of: first, recurring units; or, second, a continuous pattern. Alternation of two unlike elements, so characteristic of redware is not seen in the biscuit system of ornamentation; nor is the redware method of marked panelling of the band by groups of vertical lines, often resorted to. When such panelling does occur it seems to be a part of the units themselves rather than a conscious segregation of the units.

RECURRING UNITS

With a very few exceptions all band decorations of recurring units may be described as based on recurring pairs of opposed

[1] The treatment of the decoration, both of biscuit and redware in this paper, is purely analytical and descriptive. Mr K. M. Chapman is engaged in studies on the morphology of the symbols, which, when published, will surely go far to aid us in understanding the development of the decorative art of the Southwest.

right triangles with oblique hypothenuses (plate XVIII, fig. 2). The right triangles are not solid but are merely triangular fields which contain more or less elaborate interior decoration (plate XVIII, fig. 1). The two triangles which go to make up the unit may be like in structure or, more often, unlike, in which case the triangle which varies from the standard usually takes the form of a heavy line bent into triangular form (plate XVIII, fig. 1).

The standard triangle is almost invariably present. It is characterized by an open space at the base formed by cutting off and filling in two of the angles (plate XVIII, fig. 3). The hypothenuse is usually paralleled by one or more straight lines (plate XVIII, fig. 4). The variations of the filled angles are interesting and may, perhaps, give us a basis for developmental study. The most obvious method of cutting off the corners is at right angles (plate XVIII, fig. 3). And this would theoretically s em to be the earliest form. A development in two directions is possible, all the stages of which are actually found on the pottery (plate XVIII, figs. 6, 7, 8, in one direction; figs. 9, 10, 11, in the other). It may be stated as a general rule, that as the angles are modified from the theoretically first stage, the lines paralleling the hypothenuse become more numerous and are more often elaborated with dots (plate XVII, figs. 8 and 9).

As was stated above, both triangles of the unit are not always alike, but as was also stated, the standard form is almost always present. The varying triangle when in the form of a bent line may be simple (plate XVIII, fig. 12), or it may consist of several fine parallel lines which usually contain dots between them (plate XVIII, fig. 13). In a few cases the bent line ends in three points (plate XVIII, fig. 14). Another variant from the standard which occurs in fifteen cases contains (usually in the right angle) an ornament which seems related to the step-figure of black-and-white ware (plate XVIII, fig. 15). This element is not infrequently seen in other designs, such as the cross figure. It is always used to fill the corner of a square or triangle.

BAND DECORATIONS OF REPEATED UNITS OTHER THAN THOSE BASED ON OPPOSED TRIANGLES

When a part of an awanyu, arm or body, or of a cross figure partakes of the nature of a band, it is often decorated with units of the type just discussed. Other units are also used which, though they seem more typical of awanyus and cross figures than of true bands, nevertheless occur occasionally in regular bands and so may perhaps best be discussed here. Such units are the "opposed birds" and the "cut down rectangle."

The first of these two forms consists of a rectangular panel in which the two diagonals have been drawn. The upper and lower triangles formed by drawing the diagonals are filled with dots, and one of the diagonals has a small crook at each end (plate XIX, fig. 9). That this figure was meant to represent two birds may seem far-fetched, but it should be noticed that the bodies of most of the really naturalistically drawn birds are spotted (see fig. 14), and that in a very similar figure found on the ancient black-and-white ware, the heads are depicted in the same manner.[1] Some variants of this design are perhaps somewhat nearer the naturalistic, in the possible indication of the tail (plate XIX, fig. 10).

The second figure, the "cut down rectangle," seems purely geometrical. It is made by reducing the area of a rectangle by drawing pairs of lines parallel to the sides, then parallel to the ends inside the first set and so on (plate XIX, fig. 11). This system is also applied to reduce the area of a rectangle somewhat, without entirely filling it up, in which case a figure, often the "opposed birds," completes the pattern (plate XIX, fig. 12).

Still another band unit, which we may call for convenience the "drawn curtain," occurs but twice. It might be considered a sport but for the fact that the two examples come from Tyuonyi and Ojo Caliente respectively, and that in these two widely separated pueblos the design is executed in exactly the same

[1] See Cummings, loc. cit., p. 42.

manner. A drawing explains this figure better than a verbal description (plate XXVIII, fig. 16). It will be noticed that the elements that make up this unit are characteristic of the typical opposed triangle figures.

BAND DECORATION, CONTINUOUS PATTERNS (PL. XIX, FIGS. 1–8)

These decorations are all based on the zigzag. The simplest, a plain zigzag line (plate XIX, fig. 1), is very rarely found. The commonest form is composed of two parallel zigzags with dots between them (plate XIX, fig. 5). When three lines are thus combined the dots are usually applied to their outer sides, giving a rather different effect (plate XIX, fig. 7). A succession of diamond-shaped units is occasionally produced by crossing two zigzags (plate XIX, fig. 8). This series is very short, however, and is, perhaps, not allied to the single zigzag. The zigzag designs are used both on the interior and exterior of bowls and also as neck ornaments for ollas. When applied to a bowl exterior or an olla they are, of course, bands pure and simple, but in the interior of a bowl they sometimes give the effect of a star.

HATCHED TRIANGLES DEPENDING FROM THE RIM

Figures of this class are found only on small bowls with incurved rims. Such bowls are almost always decorated either

FIG. 12.—Biscuitware.—"Double flag" figure.

inside or out with hatched triangles. The units usually hang directly from the rim rather than from a line. They may be either right-handed or left-handed. On the exterior they

encircle the bowl (plate XVII, fig. 10), while in the interior their apexes approach each other (plate XXI, fig. 3). In the interior there are usually three units of the design, two and four occurring more rarely. The exterior follows the interior in number of units. The interior and exterior are identical in about fifty per cent. of the cases. Other designs combined with this one are the "dotted zigzag," the "double flag" and in two cases the "cross figure." It is never found with the whirling awanyu or the standard band decoration. An interesting feature of this system of decoration is the fact that with it are found the majority of the life symbols, turtle (fig. 15), speckled body bird (fig. 14), and dragon fly.

The "double flag" decoration occurs fifteen times. Like the hatched triangle design it is usually found on the smaller bowls, but it is also used as a "filler" in larger devices such as awanyu, and as a neck ornament for ollas (see plate XVI, fig. 3). It is fairly constant in type, a straight line with parallel terminal projections running in opposite directions (fig. 12). The projections vary in number and length and the top and bottom ones are sometimes dotted (fig. 12, *b*). Three of these units placed in the interior of a bowl fall into a sequent or whirling order which may prove of morphological importance.

THE AWANYU

This form of decoration occurs on about thirty per cent. of the pieces tabulated. It is particularly characteristic of bowl interiors, there being few instances of its presence on ollas, and but one case, and that considerably modified, on a bowl exterior.

The name awanyu I borrow from Hewett, merely as a convenient term, but without indorsing his identification of the symbol.[1] More investigation is necessary before we can speak with certainty of its meaning. The characteristic features of the symbol are the five-pointed triangular figures which form what one might call the heads. These seem essential to the true awanyu.

[1] Hewett, *Communantés*, pp. 91, 92.

Awanyus may be classified as follows:

	No. of examples
I. Whirling Type (pl. xx, figs. 1–4):	
(*a*) Double head with body (pl. xx, figs. 1 and 2)	23
(*b*) Triple head without body (pl. xx, figs. 3 and 4)	8
II. Band Type:	
(*a*) Head attached to half a standard band decoration (pl. xxi, fig. 2)	4
(*b*) Body and head a band (pl. xxi, fig. 1)	4
III. Independent Head Types:	
(*a*) Dependent from rim (pl. xxi, fig. 4)	2
(*b*) Diamond type (pl. xxi, fig. 3)	2

Whirling Type.—As the table shows, somewhat more than three quarters of the examples belong to the whirling type and of these three quarters are of the double head with body variety. These awanyus have a rectangular body painted across the circular interior of the bowl, and two arms attached to diagonally opposite corners of the body, which, running anti-clockwise, fill out the two halves of the circles, terminating in the typical five pointed heads (plate xx, figs. 1 and 2). Considering the parts of the figure separately, we see that the body is usually a decorative panel or is divided into two or more panels according to its length and thickness. The arms are less commonly so treated, often being merely dotted or even plain lines. The body sometimes terminates in two triangular projections. These are seen in one awanyu of the band type (plate xxi, fig. 1), where they are suggestive of a forked tail.

The bodyless type of the symbol is much less common. It is usually three-armed, (plate xx, figs. 3 and 4), though there are examples with two and four arms. In the typical form the three branches or arms start near the center of the bowl, but without being joined together, and run nearly to the rim where they are bent to the left or against the hands of the clock, and terminate in the typical heads. The arms consist of one, two, or three parallel dotted lines, and are never panelled or decorated as are the bodies and arms of the previous class.

Band Types.—Here the awanyu fills the comparatively narrow band under the rims of bowls or about the bodies of ollas and consequently loses its circular or whirling form.

Examples of this style are uncommon. They fall into two divisions:

1. Those having for body one of the "pointed filled" triangles with its accessory hypothenuse lines of the standard band form (plate XXI, fig. 2).

2. Those with a long, panelled body similar to the body of the first whirling type (plate XXI, fig. 1 and plate XVI, fig. 3). There are, of course, no arms in either case, the heads being joined directly to the ends of the bodies. The anti-clockwise direction is also usually adhered to in designs of the band class.

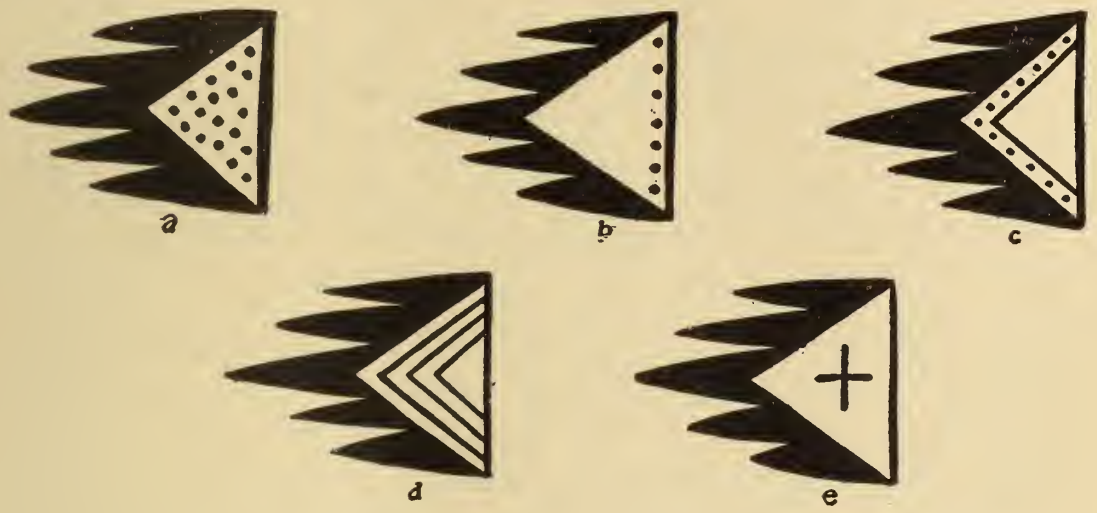

FIG. 13.—Biscuitware.—Awanyu "heads."

INDEPENDENT HEAD TYPES.—There are only three specimens in which the head is the predominating feature. Of the three, one has three heads on very short arms and partly indicated bodies, which are attached to a line under the interior rim (plate XXI, fig. 4). The other two lack arms entirely, the five points of the heads being applied to the long ends of a diamond figure which apparently represents the body (plate XXI, fig. 3). The two examples come, one from Otowi, one from Ojo Caliente, a fact which would seem to indicate that the form is neither accidental nor the work of a single potter.

The "head" or "heads" of the awanyu vary less than any other part of the symbol. As has been shown above, any other feature may vary or be absent, but this element always holds to its regular form. It has five tapering projections

arising from a triangular base (fig. 13). The projections are uniformly painted black and the base left open. The occasional rounded form of the base (plate XXI, fig. 1) and the rare occurrence of four or six projections are, I am sure, due to careless drawing. The same cause, I think, is responsible for the few cases in which the heads are pointed with the hands of the clock. About half of all the heads contain some arrangement of dots in the open base (fig. 13, *a*, *b*, *c*); a few are embellished with concentrically drawn triangles (fig. 13, *d*) and there are two cases in which a small cross is introduced (*e*).

THE CROSS FIGURE (PL. XX, FIGS. 5 AND 6)

There are only five examples of this decoration, three from Otowi, one from Tschirege, and one from an unknown locality. It is a cross with arms of equal length placed in the round field of the bowl interior. The arms are divided into panels and there is usually a square panel at the junction of the four. In three cases there are two parallel lines with dots between them, running from each corner of the ends of the cross arms. In one example these are replaced by the "bird wing" and in another the ends are forked as in some of the awanyu bodies.

The panel designs of these cross figures are strikingly like those of the panels in awanyu bodies, particularly in the prevalence of the "cut down rectangle." Some relation between the two seems probable, but theorizing on such scanty evidence is dangerous.

LIFE FORMS

There are a few decorative elements which may reasonably be identified as naturalistic representations. That some of them are birds seems certain (fig. 14), others are more doubtful and resemble what have been called butterflies and dragonflies in other regions. Points to be observed in future morphological investigation are: the form of the bird head with the two parts of the beak shown, the form of the wing, of the feet, and particularly the presence of dots in various parts of the designs. There are two turtles, shown fairly realistically (fig. 15), but no human, floral, quadruped, or snake forms.

FIG. 14.—Biscuitware.—Birds.

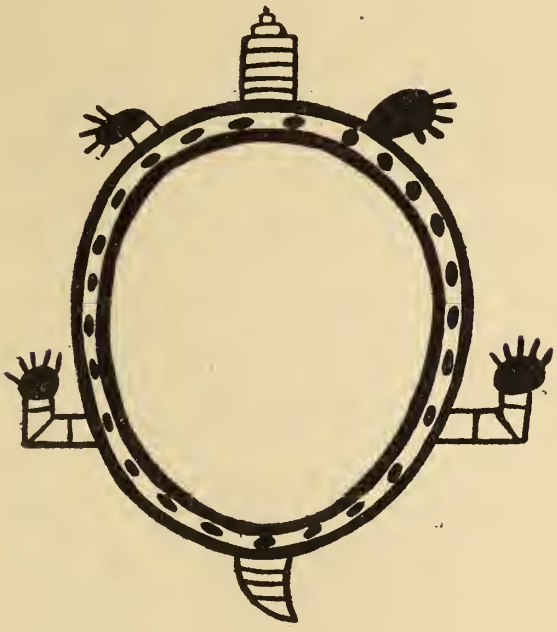

FIG. 15.—Biscuitware.—Turtle.

MINOR DECORATIONS

On biscuitware pieces, particularly bowls, there are several areas usually, but not invariably, decorated; areas too circumscribed for the application of large standard designs. In bowls these surfaces are the flat top of the rim, and the interior margin of the rim. The top is almost always embellished by spots or dabs of paint which I have called "ticks." They occur in many ways: at regular intervals all around; in groups of two, three or more; or in more complex groupings such as 2, 3, 2, 3, etc.

The most common form of ornamentation for the inner margin is the zigzag line (fig. 16, *a*, *b*) or the festoon (*c*). Broken parts of these zigzags are also seen (*d*), as well as figures which have something the appearance of birds (*e*). When, as sometimes occurs, another line is added, a figure approaching the naturalistic is formed (*f*). In which direction this sequence ran, it is, of course, impossible to say without further material.

Other areas of minor decoration are the underbodies and the inner margins of the rims of ollas. These bear the same zigzags and festoons seen in bowls, as well as the broken-up parts of the same. Series of vertical and horizontal bars are

also occasionally met with (fig. 16, *g*), as are various combinations of straight or curved dashes (*h*, *i*, *j*).

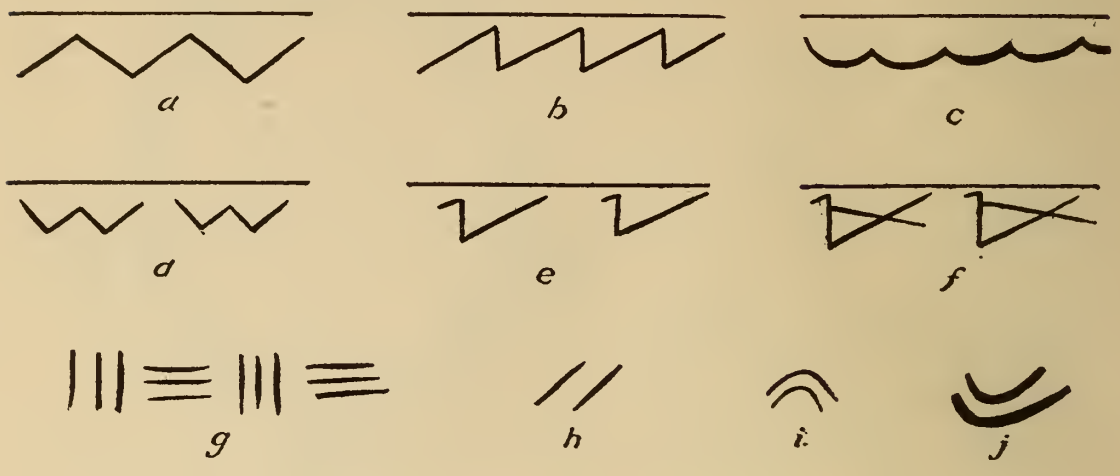

FIG. 16.—Biscuitware.—Minor decorations.

CORRELATIONS

In studying the designs an attempt was made to find correlations between the classes of decoration. I thought it possible that some particular form of exterior ornament might always, or at least often, be associated with some interior one such as, for example, the awanyu. This I was not able to demonstrate, nor, indeed, did I find any evidence of such a condition. Some forms, however, seem to have an affinity for certain others. With the hatched triangle, for instance, occur the majority of the life forms. With it, also, often occur the "dotted zigzag" and the "double flag," while the awanyu and the standard band decorations are wanting.

In the awanyu and the cross figure the panels are often occupied by the "opposed birds" and the "cut down rectangle" elements which rarely occur in any other connection.

On the exterior of awanyu bowls the commonest design is the standard band pattern, but all the forms of the zigzag band designs are also present.

REDWARE

The designs may be classified under three general heads:

I. Bands.

II. Independent units, usually repeated.

III. "Allover" Type.

There are, of course, examples which do not fall accurately into any one of these classes; but in general the decorations are remarkably uniform. Differences occur in the filling up of the framework rather than in the planning of the ornament as a whole.

I. Bands.

Bands are divided into two types:

A. True bands with framing lines above and below (plate XXII, figs. 1, 2, 3).

B. A single "base line" with ornament:

(*a*) Placed upon it (plate XXII, fig. 4).

(*b*) Depending from it (plate XXII, fig. 5).

The true bands are greatly in the majority. They are very uniformly framed by lines of equal thickness, two above and two below (plate XXII, fig. 1). In this feature redware differs from black-and-white ware and biscuit, where the topmost and lowest lines are usually the heaviest, and there are series of finer lines between them and the design proper.[1] The "break" is almost always found, occurring on one side of the bowl or olla in the top set of lines, and on the opposite side in the lower pair (plate XXII, figs. 1 and 2). This is in accord with the rather carefully balanced nature of the ornamentation as a whole.

The idea of balance is still further carried out in the interior treatment of the band. Series of vertical bars are drawn between the framers, dividing the band into panels, usually four in number, which panels are occupied by the true units of the design (plate XXII, figs. 1, 2, 3). The standard arrangement seems to be an alternation of two unlike units. There is practically no variation from this rule.

Keeping in mind the fact just mentioned, viz.: that unlike elements are alternated; let us turn to an analysis of those elements, leaving for later study the decorations which consist of repeated units, and those which cover the whole interior of

[1] See Biscuit designs, plate XVI, figs. 2 and 3; plate XVII, figs. 8, 9, 11.

bowls. The most common arrangement seems to be the alternation of a conventional bird figure with a diagonal ornament composed of more or less elaborated oblique parallel lines (plate XXII, fig. 1). I consider the latter first as it is the more constant of the two forms.

PANELS. OBLIQUE DECORATION

This element of the design consist of two or more lines drawn obliquely across the panel in either direction. In short panels they usually come from the corners (plate XXIII, fig. 1), while in longer ones they do not reach the vertical bars (plate XXIII, fig. 2). When the panel is even longer a second set, occasionally a third or fourth, may be drawn, thus forming a zigzag (plate XXIII, fig. 3). The elaboration of these oblique lines is interesting and is practically always found along their outer edges. I give a series (plate XXIII, figs. 4–15 incl.), illustrating the various developments.

The variations given in plate XXIII are, I think, rather ornamental than symbolic. They are all closely related and apparently derived from the terraced form (No. 7). Poor drawing might have been the origin of Nos. 9, 12 and 13, while the produced sides of the terraces probably gave the idea for Nos. 10 and 11. No. 14 may also have started in this way; the crooks which give the little units their birdlike appearance having been an adaptation based on an accidental resemblance. Whether or not these should really be classed as birds, may be judged by the reader after we have presented that type. The little units are placed, as the drawings show (plate XXIII, fig. 14), on the outside of the sets of parallel oblique lines. They follow each other up on one side and down on the other. Plate XXIII (figs. 16–24 incl.) gives all the forms that I have been able to record.

BIRDS (PLATE XXIV)

We now come to the large class of symbols which, for want of a better term, we call birds. That they are by no means naturalistic representations is, of course, obvious. Neverthe-

less, they remind one of birds, and somewhat resemble bird figures from ancient black-and-white ware. On the exterior of black-and-white bowls from the Mesa Verde[1] there sometimes occur series of figures which undoubtedly represent birds. The heads are merely crooks, the bodies semicircular, feet and legs are drawn naturalistically, and the tails shown as three or four parallel lines. The two birds with touching breasts from the Cannonball Ruin, on McElmo creek, Colorado,[2] are built on the same plan. In these cases the head is depicted by a mere crook, the tail by parallel lines, and the legs and feet are hardly more elaborately drawn. It is interesting to note that the wings do not appear. I do not hold that the Pajaritan "birds" are necessarily the descendants of these black-and-white symbols, but merely wish to point out that a crook was there considered a sufficient representation of the head. On this somewhat scant evidence, I venture to identify as bird figures those elements bearing the crooked forward part or "head."

A classification of the "birds" is difficult; I have never seen two from different pots, exactly alike, yet they all have the following common characteristics which seem essential: the aforementioned bent or crooked "head" (plate XXIV, fig. 1, *a*), vertical "legs" (plate XIV, *b*), and a horizontal "tail" (fig. 1, *c*), the top of which is always drawn in the same plane with the head. This is the simplest form that contains all the elements.

Of the three parts the "tails" are the most variable; the "legs" the least. The latter consist of from one to four or even five vertical bars, running from the base line to the "head-tail" line. The upper line of the tail is always a continuation of the head line, and the additional parts of it lie below and against the upright "legs" (plate XXIV, fig. 2). The commoner forms of the tail are given in the plate. Where the tail ends in plain lines these are sometimes crossed, near their termination, by one, two, or three short vertical bars (plate XXIV, figs. 3, 5, 9).

[1] See Nordenskiöld, "*Cliff-dwellers of the Mesa Verde*," Pl. XXVIII, fig. 3.

[2] Cummings, loc. cit., p. 42.

The crooked "heads" vary considerably. They may consist of a single line (plate XXIV, fig. 1), two lines (11), or an enclosed space (5, 12). A dot may, perhaps, be considered a representation of the eye. In a large number of cases there are small projections on the front of the crook, four to ten in number, but usually six (figs. 6 and 8 of plate XXIV).

Where red filling is present in the figure it is generally found in the head and front part of the legs, the whole making a solid line of color (plate XXIV, fig. 3).

GENERAL ARRANGEMENT

I have taken up the bird symbol here, among the panel decorations, because it is in panels that it is most commonly found. Some of its other occurrences are of interest. A rule of two seems to hold fairly constantly throughout its manifestations—two figures appear in the panel arrangement, two birds form part of several of the "allover" designs (see below), while many exterior decorations consist of two large red-filled birds variously placed.

Little birds are sometimes seen on the apexes of triangles and I have observed traces of this feature on many sherds too badly broken to be copied.

There are a few figures which have bird characteristics, but which lack the crooked head. They all have legs and tails; in three the head is replaced by a triangle, one has no trace of head, while the fifth bears the projections seen on some heads in the place where the head should be.

A decoration very commonly used as a panel-filler, alternated with the oblique types,[1] appears to be derived from the archaic opposed keys. It consists of two opposed figures, coming from the top and bottom framing lines respectively. Plate XXII, fig. 3, shows a pair of these decorations. It will be noticed that the addition of a crook head is all that is necessary to add to the figures in order to make a typical bird symbol.

Another panel figure, though uncommon, is so regular in its structure that I think it may be considered a type. There

[1] Never, I think, with bird symbols.

are seven instances of it. Five come from Tuyonyi, and one each from Tschirege and Otowi, this fact proving that it is neither the work of a single potter, nor a purely local development. Its make-up is better shown by a drawing than by a description (plate XXII, fig. 2). The main bent line always appears, the stepped appendage (which bears some resemblance to certain birds' tails) is present in four cases; and the dotted line, or lines, across the broad angle occurring in all but one example, seem to be an essential part. It is alternated with bird or allied symbols four times, once with a diagonal, and once with a zigzag.

THE "JOG FIGURE"

Perhaps a bare description of this symbol, and a statement of its occurrences, is better than an attempt to fit it into a classification. There are five instances: (three from Tyuonyi, two from Ojo Caliente); all from olla-bodies and apparently all

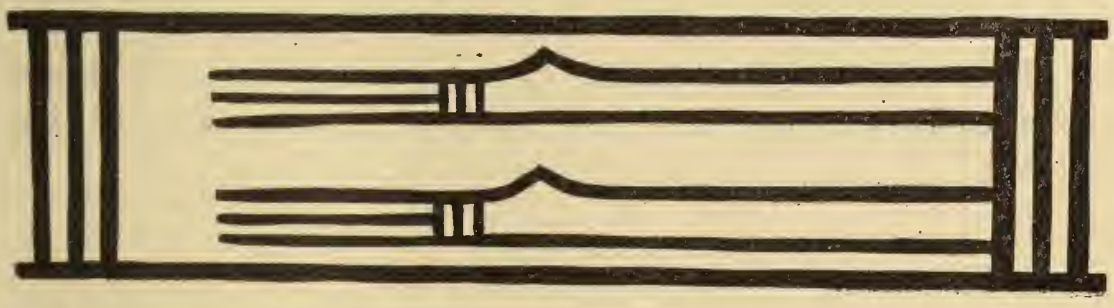

FIG. 17.—Redware.—Jog figure.

in panels. As the type-drawing shows (fig. 17), it is a double figure with duplicate parts: long shafts, "jogs" pointing upward, and tripartite ends cut off from the shafts just beyond the jogs by cross lines. Its tripartite ends seem to ally it to the "three finger type" (see below). Some Ojo Caliente examples, however, by vertical bars (legs), and terraced terminations (tails) seem to show analogies to bird symbols.

SPECIALIZED PANEL DECORATIONS FROM OLLA NECKS

Two forms of panel designs, which are practically restricted to the neck-bands of ollas, may be called:

(1) The "swallowtail"—eleven examples (fig. 18, *b*)

(2) The "dash type"—six examples (fig. 18, *a*)

They are single figures, varying only in detail, and are best illustrated by the drawings. The swallowtail is apparently derived from the produced sides of triangles drawn on horizontal bars. It is often elaborated with dots along the lines, and with smaller interior triangles.

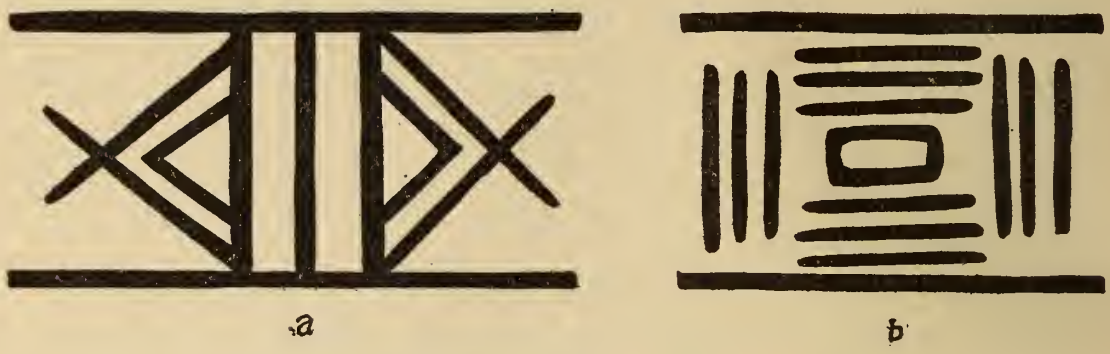

FIG. 18.—Redware.—Olla-neck designs.

The "dash" figure is cross-shaped in plan, consisting of sets of dashes arranged about a common center, which sometimes takes the form of a small rectangle.

There are two occurrences of the "swallowtail" on bowls, one exterior from Puyé, one interior from Tyuonyi. The "dash" design I have found only on olla necks.

SINGLE-LINE BANDS

This form of decoration is practically restricted to bowl exteriors and particularly to those of the "olla type." In it the units of design are attached to a single line or single pair of lines, rather than placed between pairs of framing lines as is the case with true bands. The elements may be on top of the line or may hang from it. A single unit is repeated; there is, of course, no panelling; and alternation occurs very rarely. There are two types:

1. Where the elements are attached to the line
   - (*a*) Above
   - (*b*) Below
2. Where the decoration is part of the line itself
   - (*a*) Above
   - (*b*) Below

1. (*a*) Detached symbols placed along the line, usually on the upper side.

(*b*) Continuous pattern, usually of swallowtail triangles, along under side. Found principally on olla bowls (plate XXII, fig. 5).

2. These are large, bold, red-filled designs, the elements of which are integral parts of the "base line." The base line is double; one of its sides is continuous, the other (upper or lower as the case may be) is worked into the desired form, the red filling being unbroken (plate XXII, fig. 4). The repeated symbols generally represent birds. As they depend largely on the mass of their red filling for effectiveness, little detail is indulged in. The crooked head and upright leg-region run through the series. In general appearance, these red-filled single line bands suggest the designs of independent repeated units, the next group to be considered.

II. Independent Repeated Units

Designs of this class are found, almost exclusively, on bowl exteriors. The few exceptions occur in the decoration of olla necks.

A short series best illustrates the forms taken by the commonest type, that of the bent line ending in key figures (plate XXV). Two of these units regularly constitute the exterior ornamentation of a bowl or of an olla-neck (see plate XXV, fig. 2). This arrangement occurs again and again, particularly on bowls from Puyé. The variations in the figures consist largely of differences in the terracing of the key ends (plate XXV, figs. 8–12 incl.). These do not seem to be of much importance. More interesting are the details shown in figs. 3, 5 and 6, the first two resembling features commonly associated with birds' tails, the latter having some affinity to the "sun symbol." These analogies to the bird are still further noticeable in the ornament as a whole. The key part is not unlike some birds' tails, the addition of a crooked head would make a very typical bird. Just this is seen in plate XXV, fig. 7.

The second main group of designs of independent repeated

units may be called the *Three Finger Type* (fig. 19 and plate XVII, fig. 1). These are very interesting because they adhere closely to a fixed standard, and because of their possible relation to the "jog" figures, certain "allover" types, and also to the awanyus of biscuitware.

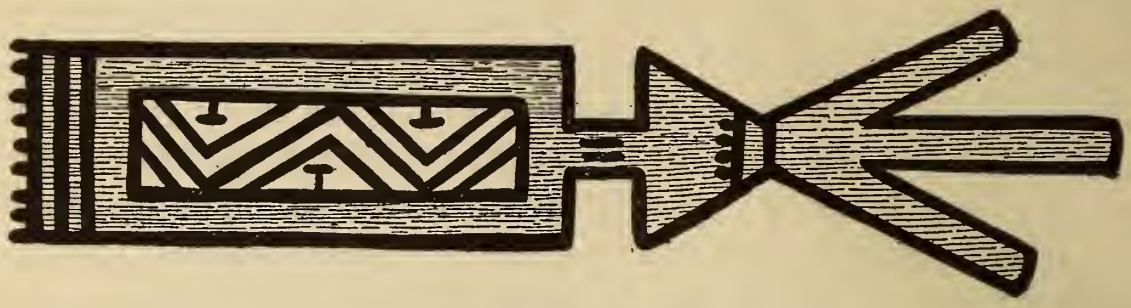

FIG. 19.—Redware.—" Three-finger " design.

They occur exclusively on the exteriors of bowls, usually run from left to right and are always two in number. They may be described as having a long rectangular "body," short "neck," and a triangular "head," from the point of which grow three long, square-ended projections. The whole is drawn in outline, and is filled, except for a long rectangular space in the body, with red paint. The open body space is treated as a band, but is rarely panelled. It usually contains three plain or dotted lines, arranged in a zigzag. I have twenty-five examples, three whole, the rest more or less fragmentary. Eighteen show the distinguishing "three fingers," three the equally typical neck, while the remaining four are probably parts of bodies. In twenty-two cases the direction is evident; twenty run from left to right, two in the reverse sense.

The three fingers, as I have said, are blunt-ended, either square or slightly rounded. The middle one is the longest and runs horizontally in the same line as the body; the other two diverge somewhat, the upper reaching to the rim. The junction between the "fingers" and the apex of the head is usually cut across by bars, the inner one often dotted. The head apex is turned away from the body in all but two cases, the inside of it is decorated with a triangle three times, and with what may be crude representations of the human face twice. This latter feature I imagine to be an adaptation due

to the accidental resemblance of the whole to a plumed head.

The short neck is often crossed by bars but may be left open. The decoration of the body space is largely confined to line zigzags, but key-figure, terraced line, and short T marks also appear.

While evidence as to the termination of the body is scant, a square end seems to be conventional. One example from Tschirege has a dotted butt, one from Tyuonyi is finished off with a T-shaped appendage.

Occurrences by locality are: Ojo Caliente 1, Tschirege 2, Puyé 3, Tyuonyi 19.

III. "Allover" Type (plate xxvi)

As I remarked in the introduction to this study, those designs which cover the whole interior of bowls are but poorly represented in collections, because of the fact that they can only be made out with certainty when a large part of the piece is recovered. There are, however, a few examples, one group of which, bearing some resemblance to the three fingered figures, may, perhaps, best be considered first.

Little can be gained by a description of these (plate xxvi, figs. 4 and 5); their similarities and dissimilarities are obvious. The three-branched ends, while not strictly like the three finger type, give the same general effect; there are two units in the design, the filling of the arms, and the cutting off of the heads by crossbars, seem to be points in common. There may have been a convention that a given symbol on the exterior of a bowl should take a certain form: on the interior a different one. It is hardly safe to theorize.

More homogeneous are the designs shown as figures 1 and 2 of plate xxvi. I am sure that this is a standard decoration, as I have seen many fragments from designs of the same style that I have not been able to restore. The essential feature seems to be a band drawn boldly across the surface of the bowl, jogged in the middle, with a small bird perched on each angle of the turn of the line. No inferences can be drawn from the

supplementary ornamentation of fig. 1; the crosses in the red line, however, should be compared with those seen in figs. 6 and 7 of the same plate.

Figures 3 and 6 are interesting as being the only examples of the spiral in any form that I have seen from the wares of the large ruins on the Pajarito.

Figure 8 shows an example of a general type which the sherds prove to be not uncommon. It depends for its effectiveness on a symmetrical division of the interior by red-filled bands and little on detailed decoration.

Figure 7, plate XXVI, is, as far as I know, unique. The two birds, however, are placed in the same relative positions as those in fig. 5.

FIG. 20.—Redware.—Human heads.

Figure 20 shows the only three certain representations of the human face that have so far been found in "Pajaritan" pottery. The left hand one is from a bowl-bottom, the center from a bowl exterior, that on the right from an olla-neck.

Only two good examples of animal forms have been found, one from a bowl exterior, and one from a small olla. The latter belongs to a type which is not unusual on the pottery of other regions. It is also commonly found in the pictographs of the San Juan drainage. The identity of the species represented is problematical. No plant forms occur.

What may be called the "sun symbol" is a circle or semicircle with radiating lines. It appears twice from Puyé and once from Tyuonyi; in this last case it is alternated with the human face. It is an uncommon and variable feature at best and probably should not be given typical rank.

The little rectangular "prayermeal" bowls are interesting because of the likeness which they bear to the ceremonial dishes in use among the modern pueblos. It seems probable that they had a like use in ancient times, and this view is perhaps strengthened by the uniformity of their decoration. This consists of a terraced figure in six of the seven cases recorded. It should also be added that one of the prayermeal bowls in the New Mexico Museum (plate XVII, fig. 5) has terraced sides. This feature is also found in modern Zuñi and San Ildefonso ceremonial dishes.

I have described the decoration of the "Pajaritan" wares, both red and biscuit at considerable length because the art of this group is without question the most homogeneous and highly specialized development of its kind known in the Southwest. This homogeneity and susceptibility to analysis renders "Pajaritan" decoration of particular value for comparative purposes and for studies in the development of Southwestern culture.

PRE-PAJARITAN WARES

There are a number of sites along the Rio Grande and its tributaries which produce red and biscuitwares like, yet unlike, the pottery from the large "Pajaritan" and allied ruins. The majority of these houses are of from ten to forty rooms; smaller communities than the Pajaritan settlements, yet larger than the houses at which black-and-white occurs. I have no idea as to what their distribution may be, but they seem to run from the Jemez mountains in the north nearly to El Paso.[1] Ceramically, they appear to fall into two groups, one of which is more like the standard Pajaritan than the other. Although I have seen sherds from many sites, I have adequate material for description from only one of each of the groups. These are "Agua Fria School House" (least like Pajaritan) and "Frijolito" (more like Pajaritan).

AGUA FRIA

"Agua Fria School House" ruin lies on the Santa Fé creek at Agua Fria, about three miles south of Santa Fé. I call it

[1] Sherds in the Bandelier Coll., Peabody Museum.

the "School House Ruin" to distinguish it from another nearby ruin at which only black-and-white ware is found. Here in 1911 I made a large collection of sherds.[1] They consist of red and biscuitware, the former much the more abundant. There is also some black-and-white.

REDWARE

This pottery is gray in cross-section and carries little or no tempering material. The visible surfaces are coated with a fine, clear, red slip which is well smoothed, but not at all glossy. The decoration is applied in very thin, "flat," jet-black glaze, with none of the iridescence and brownish shades seen in the Pajaritan. It is seldom glossy, parts of nearly every line are "untaken," and where the vitrifying substance is thickest it has usually collected in little flat, rounded masses, giving a rugose appearance which is very characteristic.

SHAPES

Only two forms are represented in the collection: bowls and ollas. The former were apparently from 12 in. to 14 in. in diameter and in spite of this fairly large size were strikingly thin and light. The ware seems to have been very tough and strong. The body of the bowl was gently rounded and the rim, which had no thickening, was without bevel in either direction. The edge of the rim was square.

Of the ollas little can be said, as only a few fragments were recovered. The underbody was surely round without the abrupt shoulder seen in some other classes; the neck was elevated in a direct collar from 1 in. to 2½ in. high. There were no handles.

DECORATION OF BOWLS[2]

With the exception of two sherds which show oblique rectilinear designs in thin white lines (fig. 21, *d*) suggestive of Halonawan and Heshotauthla, there is no exterior decoration at all. The interior is ornamented either directly upon the red

[1] P. M. Cat. No. 81853.

[2] Olla decoration not ascertainable.

slip or upon a band of white or yellowish slip.[1] The ornament begins at a single line set ¼ in. to ⅜ in. below the rim and ends at a similar line near the bottom. Sets of framing lines do not seem to occur. Pure geometric elements were apparently the rule; there is no sign of bird or other life figures, nor of such symbolic representations as the awanyu or the Pajaritan "bird." Curvilinear motifs, the circle and scroll, are rare.

The general arrangement of the designs is oblique and the elements employed are pairs of opposed key figures on raking stalks (fig. 21, *a*), stepped lines (very commonly) (fig. 21, *b*); and bands of single checkerboarding each open space bearing a dot (fig. 21, *c*).

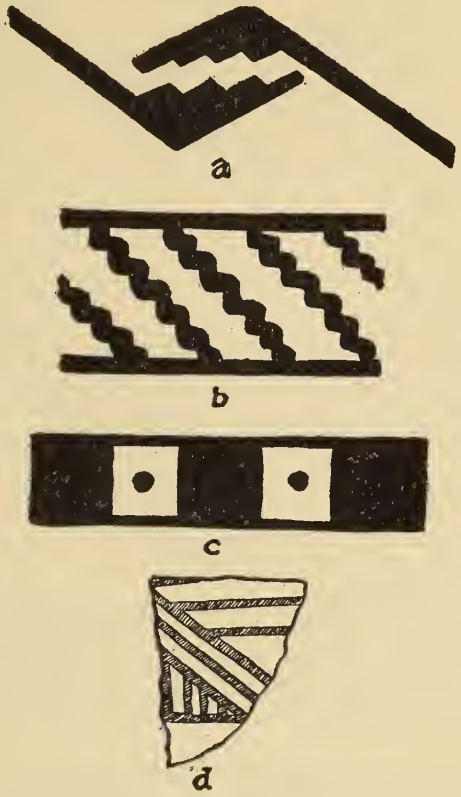

FIG. 21.—Agua Fria Schoolhouse Redware.

BISCUITWARE

Biscuitware is much less common than red. It is more like black-and-white ware than is the biscuit of the standard Pajaritan class. From black-and-white ware, however, it is easily distinguished by its much greater thickness, softness, and lightness. The slip is dull whitey-gray well smoothed over the whole interior. The exterior is unslipped and therefore rough, showing the coarse dark gray paste.

The decoration of this biscuitware is not legible on the small sherds collected; but it can safely be said to be quite unlike that of Pajaritan biscuit, none of the typical elements of that

[1] When the decoration is over white slip, the glaze is often a bright green in color. This is also true of Little Colorado glaze when over a white base. That the change in color is due to some chemical action by the white slip is shown by the fact that the same lines become the normal black when they run off the white base on to the red ground.

style being observable. Whether it is allied artistically to the black-and-white or not is problematical. I am inclined to think it is.

FRIJOLITO

While this pottery is markedly different from what I have called standard Pajaritan it is much less so than that just described. Its place in the archeology of the region can be better discussed after an examination of the wares. Red and glaze

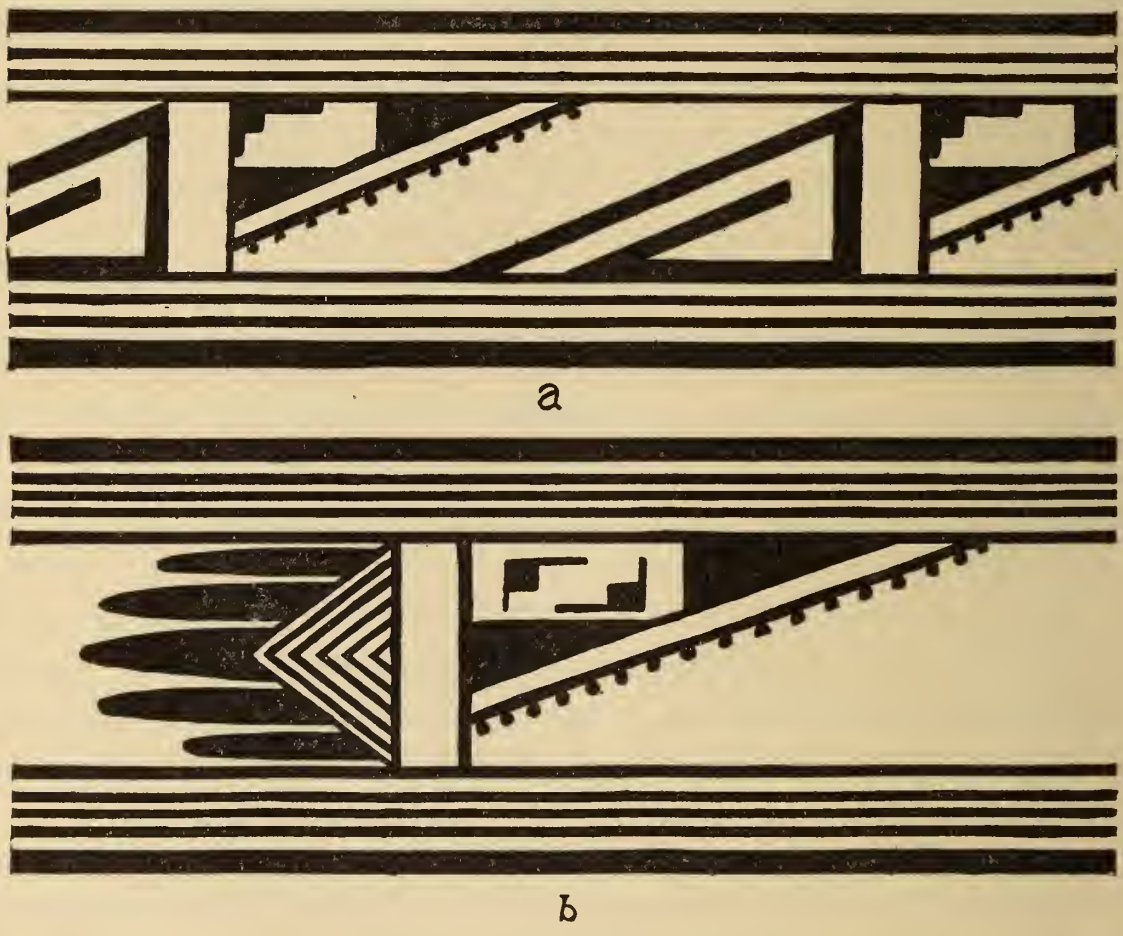

FIG. 22.—Frijolito biscuitware.

and biscuitware are both found, also the crudely made blackware, both smooth and coarsely corrugated. No trace of incised pottery was discovered.

While the biscuitware does not seem to differ very strikingly from that of the large ruins either in shape or decoration, the standard triangle design has the corners cut off at right angles to each other in the theoretically early manner (fig. 22) and

the band awanyu seems to have, in every case, small figures in its open rectangular space (fig. 22). Fig. 23 shows a naturalistic bird. It is in the redware that the greatest variation is seen.

REDWARE (PLATE XXVII)

SHAPES.—Bowls from Frijolito have what we may call an "even" rim, that is to say, there is no pronounced thickening. The lip is square rather than rounded and the whole structure of the piece is lighter than in the Pajaritan type (plate XXVII, fig. 5—standard type shown in fig. 6). The olla has a very distinctive shape. It is flat-topped, with a very sharply marked shoulder, and an upright "collar neck" terminating in an "even" rim (plate XXVII, figs. 1 and 2— for rim see fig. 7. Fig. 8 shows standard Pajaritan olla-rim). Decorative zones are comparable to those of the Pajarito, except that when the collar-neck is low it is either left unadorned or treated with a narrow band ornament.

Fig. 23.—Frijolito Biscuitware.—Bird.

The base color of the ware is salmon-red, but those parts of the pieces, both bowls and ollas, on which the design is to be applied, are almost always covered with a white slip. This is sometimes heavy enough to give a dead-white background but in most cases is so thin that the red base color "shows through"; the result being a very effective pinkish or yellowish tint. The exterior bottoms of bowls and ollas always, and the interior bottoms of bowls and the necks of ollas, occasionally, are left in the salmon red base-color (plate XXVII, figs. 1–4).

The glaze is thinner than standard Pajaritan, and more tractable; hence, the designs are sharper, and can carry more detail. Red filling of a fine bright shade is much used, contrasting very effectively with the pinkish-white slip.

DESIGN.—(Plates XXVII and XXVIII.) All the examples that I have are confined to the true band and repeated unit types

confined above and below by framing lines of equal width. The lines are not necessarily two in number as in Pajaritan, nor is the "break" common or greatly emphasized. Distinct panelling of the band is the rule. The panels, however, vary considerably in number, and while alternation of symbols occurs, it is not at all rigidly adhered to. The greatest structural difference is seen in the marking off of the panels. This is accomplished in most cases by a single broad vertical bar, or by a mere open space, very seldom by a series of bars as is the rule in Pajaritan bands.

The ornamentation proper is of a pronounced geometrical character, largely planned on oblique lines which cut triangular spaces from the rectangular panels. A number of designs consist of this only, while almost all of the rest contain the "corner cut off," plus some other element.

The most striking of these supplementary elements are variations of the key-figure on stalks (plate XXVIII, fig. 2) or set directly on the base line and oblique in plan (plate XXVIII, figs. 1 and 3). An element apparently derived from the stalked key figures is shown in fig. 1 of plate XXVIII, (right hand panel). One of the most constant minor features is the dot, placed in a square space or in a narrow black-and-white checkerboard band. This occurs in about half the designs. This feature is also common at Holonawan and Heshotauthla and in the "schoolhouse" type (fig. 21).

Red filled decorations are confined to olla necks and the exteriors of bowls. They differ less than do the bands from the standard styles. The double-ended key figure predominates, but has some variations not seen in the Pajarito. Plate XXVII, fig. 9, shows an interesting design from the body of a small olla.

RECAPITULATION

The black-and-white ware is without much doubt the oldest of the four groups ("black-and-white," "schoolhouse," "Frijolito," standard "Pajaritan"). Although as yet no stratified finds have given us absolutely conclusive proof of this, the wares come from small nearly obliterated ruins of obviously

greater age than any others in the region. Furthermore black-and-white is found over almost, if not the whole, of the Southwest and is, theoretically at least, the generalized ancestor from which the more highly differentiated groups have sprung. Some strongly specialized black-and-white groups, such as that of Kayenta, Chaco cañon, the Mimbres, etc., may have been of comparatively late date, but there is no evidence that such was the case in the Rio Grande country.

The outside affinities of the local black-and-white cannot be ascertained without much more material.

"Agua Fria Schoolhouse" is tentatively placed second in point of age. I do not as yet know the range-limits of this style. The type specimens come from the vicinity of Santa Fé, but the wares occur to the south at Pecos and through the Galisteo basin (Bandelier sherd collection) to Bernalillo. Whether it will be found in the Pajarito plateau proper, in the Jemez and Puerco valleys and about Abo and Quivira in the Manzano country, I do not know. These regions were all occupied by makers of Pajaritan-like wares but it is possible that the earlier type had a more restricted distribution.

In considering the "Agua Fria Schoolhouse" class as a forerunner of the Pajaritan I may, of course, be in error. It may have been contemporaneous with it, but I am sure that it could not have been a later product. Its geometrical decoration, poor glaze, and less specialized forms, together with the fact that it is, in most cases at least, found at small ruins, lead me to think that it antedates the Pajaritan. Whether or not it was its ancestor is also uncertain, but I cannot think of any other form which, by any stretch of the imagination, could be regarded as having fathered the Pajaritan. The fact that both a redware with glazed ornament and a sort of crudely made biscuit were found at Agua Fria seems to ally the two groups in some way.

The exterior relations of "schoolhouse" pottery are fairly definite. It has strong likenesses to the wares found at the ancient Zuñi ruins, Halonawan and Heshotauthla,[1] in the

[1] See the collection in the Peabody Museum and Dr Fewkes's paper in the *Putnam Anniversary Volume.*

bowl shapes, thin black glaze and certain elements of design (stalked key, dotted-squares, stepped line). It lacks, apparently, the high development of exterior decoration in white which is so characteristic of the latter group, but a few sherds bearing white exterior designs are to be found in the collection from the "schoolhouse." As the old Zuñi wares are allied to those of the Little Colorado, we get on the whole definite western relationship for our type and are led to suspect that it is intrusive in the Rio Grande.

At the "Schoolhouse" ruin there are to be found black-and-white and corrugated sherds. Whether these were made at the same time as the redware or whether the site had been occupied in earlier times by black-and-white ware makers cannot ascertained without excavation. It should be borne in mind, however, that the pottery from Halonawan and Heshotauthla in the Peabody Museum is also a mixture of redware (with thin glazed ornamentation) and black-and-white. The data with that collection are, unfortunately, too meager to show the relationship of the two types in that region. Nothing, as far as I know, suggesting biscuitware is found there.

"Frijolito" pottery is certainly much more closely allied to standard Pajaritan than is "schoolhouse." The only considerable collections of this ware that we have was taken from a small ruin on the brink of Frijoles cañon on the Pajarito plateau. Just below the "Frijolito" lies Tyuonyi, one of the largest and most important of the regular Pajaritan sites. The "Frijolito" ruin consists of forty or fifty rooms built in the same manner as the rooms of the larger houses of the region. The masonry is of the same elongated tufa blocks, roughly laid in adobe; the round kiva (not excavated at "Frijolito") occurs in both.

The chief difference in the pottery lie, as was pointed out in the description, in the forms of the vessels, and the use at "Frijolito" of pinkish white slip with more truly geometrical ornamentation. These differences are at once obvious to any one familiar with Rio Grande ceramics; the types are distinguishable at a glance. On the other hand, the use of glaze

paint, the presence of biscuitware (which differs less than the red), and the likeness between the red-filled bird and key-figures on bowl exteriors from both groups, all show that there must have been a relationship.

From the fact that the Frijolito ruin is in close juxtaposition with a standard Pajaritan ruin, and that each site contains nothing but its own characteristic wares, I feel sure that the two cannot have been contemporaneous.[1] Some interchange would surely have taken place.

The geometric ornamentation, the lavish use of the key-figure, the presence of white slip as a decorative background, the simplicity of the bowl shapes and the small size of the ruin itself, all lead me to regard the "Frijolito" as an earlier group. If this is so the "Frijolito" would apparently fit in between the "schoolhouse" style and the standard Pajaritan. It has marked affinities to the "schoolhouse" in the shapes of the bowls, their thin glaze, and their geometric decoration; to the Pajaritan it is related most closely through biscuitware, and in the presence of red-filled bird and key-figures on bowl exteriors.

Aside from the type-ruin I know of no other that produces "Frijolito" ware, so that nothing can yet be said of its range. There are sherds of the same style in the Bandelier collection from San Cristobal, Cubero, and an unnamed ruin near Bernalillo. I have also picked up one or two at Pecos.

The term, Pajaritan, as was explained in describing the wares, is merely used for convenience. The Pajarito plateau was perhaps the center of the culture that produced them but they, or very closely allied types, are found in the large ruins from the middle waters of the Chama, and Taos, in the north, to the vicinity of El Paso in the south, and from Pecos, and the Manzano Salt basin, in the east, to Acoma, and the Rio Puerco, in the west.[2] The wares from these localities can probably

[1] I am informed by Mr Chapman that since this paper was written a few Frijolito sherds and one bowl have been recovered from the rooms in the north sector of Tyuonyi.

[2] These limits are established on the evidence of the Bandelier sherd collection in the Peabody Museum.

eventually be divided up into well-defined sub-groups of the Pajaritan such as: Pecos, Jemez, Manzano, etc. At present the material is insufficient.

The Pajarito plateau ruins are undoubtedly prehistoric, as no object of Spanish origin has been found in them; furthermore it is extremely unlikely that settlements as important as these must have been, could have escaped the careful recording of the conquistadores. Pajaritan, or wares nearly related to them, are found, however, at numerous historic sites.

How much older than 1540 the ruins producing Pajaritan pottery may be is not yet established, so that their temporal range is indefinite in that direction. On the other hand the characteristic wares are not made today, nor have they been, as far as we know, during the last 150 years. There are indications, however, that glazing was practised at the time of the conquest, as Castañeda says:[1] "In all these provinces they have earthenware glazed."

From then (1540) until the revolt of 1680 the Pueblos led a more or less settled life, and it is improbable that any sweeping ceramic change occurred. At the revolt and during the period of reconquest, however, chaos reigned. Many towns were destroyed, the Indians migrated from one pueblo to another as danger threatened, and an immense amount of mixing up took place. After the pacification the priests adopted a policy of concentration in order to have the people more easily under observation and religious control, so that many of the smaller towns were abandoned. All these things must have had a very disturbing effect on the culture of the tribes and I believe that at this time the ancient glazed ware was discontinued and the foundations were laid for the modern styles.

So much for the range of Pajaritan pottery in time and space. The wares themselves must also be cons dered intensively and in their relation to those of other regions.

The heavy, brilliant, glaze decoration of the red vessels is the most typical single feature of Pajaritan pottery. What-

[1] Winship, 1886, p. 522.

ever its chemical composition may have been, it is probable that its discovery was accidental and was due to the presence of some vitrifying flux in the pigment, or in the water used to mix the pigment. If I am right in supposing that the "pre-Pajaritan," Halonawan and Heshotauthla and Little Colorado wares were earlier examples of glazing, it seems likely that the process was, in these groups, still more or less accidental and haphazard. The glaze in them is usually poor and is often absent. In the Pajaritan style, however, it is thick and lustrous and has seldom failed to "take." With the greater brilliancy, however, attained apparently by the deliberate adding of extra amounts of the flux, came lack of controlability of the paint during firing; it spread and ran and made it impossible to produce fine, accurate lines. This would naturally have had an immediate effect upon the designs by tending to emphasize broad masses of color and to produce large striking units with little intensive decoration.

As has been said, the glaze was only used in the lines of the decoration, never to cover the whole surface of vessels. If the Pajaritan potters had continued to make these wares unmolested it can hardly be doubted that they would eventually have accidentally applied so much glazing material to some small piece that it would have spread on firing and have coated the whole surface. They were thus on the verge of an important technical advance, that of producing absolutely watertight receptacles. That it would have come can scarcely be doubted. It would be interesting to know whether glazing in other parts of the world was also evolved, as it seems to have been in process of doing here, through the accidental introduction of fluxes into pigments.

In their glazing the Pajaritan red wares seem to be allied to the pre-Pajaritan and to those of the Little Colorado, but in design I can see no resemblance either to them or to any other group. The decoration is unmistakably Southwestern in its formality and general style, and particularly in the use of the ever-present key-figure. Relationship to anything else, however, I cannot as yet trace. That is one of the problems to be worked out.

Pottery of the biscuit class has a light-colored surface, varying in shade from gray to pale yellow. The black paint of the ornamentation is adapted to the production of sharp, firm lines. In this controlability the paint differs from the glaze used on redware. The latter was evidently more liquid, spreading and running over its background, and thus practically prohibiting any attempt at producing fine, sharp lines. Furthermore the effectiveness of fine-line designs is largely lost when applied to the dark base of the redware, whereas such designs are thrown into strong relief against the light surface of biscuit pottery.

It is at once obvious that the two systems, as we find them on the Pajarito plateau, are very unlike. Designs from biscuit-ware and redware copied side by side on paper are readily distinguishble, not only by the character of the drawing, the thickness of the lines, etc., but also by more fundamental differences in the designs themselves. There are few if any obviously recognizable common elements.

The principal biscuit designs are more uniformly geometrical than are those of redware, but, on the other hand, pictorial forms: birds, turtles, etc., are much more common on biscuit vessels than on red. They do not form part of the main decoration, but are put more or less haphazard on vacant spaces.

Bi cuit designs also I cannot yet ally to the decoration of any other group, but their strong geometric tendency, coupled with the light colored base-clay, lead me to believe that they are descended from black-and-white types.

In this connection the distribution of the two classes should be considered. As far as I know no site contains all biscuit or all red. While the two are always together, there are, however, important differences in their relative abundance. In the more northern ruins: Ojo Caliente,[1] the pueblos of the Oso basin,[2] those about Taos and Picuris,[3] biscuit strongly predominates. An examination of the sherds, at any one of

[1] Explorations of the author.

[2] Explorations of Jeancon.

[3] Sherd collections of H. J. Spinden in the American Museum, New York.

these places, shows fifty or more biscuit to one red. In the Pajarito itself the two are fairly evenly divided, with biscuit predominating at Otowi, Tsankawi and Tschirege; red at Puyé Tyuonyi and Yapashi.[1] This is particularly interesting in view of the fact that at the former localities the collections were made from the burial mounds, while at the latter they all came from rooms. At first sight this would seem to indicate the mortuary use of biscuit; but at Puyé a cemetery was discovered containing nearly 200 burials with which there was no pottery at all. At Tyuonyi and Yapashi extensive search has as yet located only scattering interments and with them no pottery. As far as I can see Otowi biscuit and red are identical with Tyuonyi biscuit and red and so on throughout the plateau. The ruins themselves are very similar in construction, and apparently of about the same age.

In the south red seems to come to the fore and the Bandelier sherd collections from the lower Rio Grande in New Mexico, show very little biscuit. This, however, may be due to selective collecting and should therefore not be accepted without further research.

The question of how these two unlike wares came to exist side by side along the Rio Grande can certainly not be answered as yet. Summing up our present information, we find that both redware and biscuitware occur at all the large ruins on the Rio Grande from which we have adequate collections, but that the biscuitware seems to predominate at certain sites such as Tschirege, Otowi, and Abiquiu, while the reverse is the case at Puyé, Tyuonyi, Pecos, and probably at the southern towns. The material is, however, very scanty except from the Pajarito plateau, consisting of sherds so small that the decoration cannot be made out with certainty.

Possible explanations of the problem are:

1. That there was a mixing of two peoples or groups of clans who possessed independently developed systems and who held to them after amalgamation.

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[1] Explorations of Dr Hewett, Mr Chapman, and the author.

2. That there were different centers of production and that the pottery was distributed in trade.

3. That one of the wares played some special rôle in the ceremonial or mortuary customs of the people and therefore held to a more archaic style or developed along different lines.

4. That the dissimilarities are due largely to technique, and that divergent evolution from a common earlier form caused the double system.

I present these theories for what they are worth and do not attempt to choose between them. They should all be kept in mind, I think, in future field-work in the Rio Grande drainage. The relative abundance and excellence of each class should be carefully noted at every site examined. The range of each symbol and its frequency should be considered, as well as any evidence of specialized function.

The third typical Pajaritan style is particularly interesting because of the absence of incising as a decorative agent in other parts of the Southwest. A few scratches are sometimes found in other localities, but extremely rarely. In no case do they conform to any definite standard, and being merely "sports" are negligible.

Here, however, we find a well-marked design system, different from any southwestern painted decoration, and carried on in incised lines. The patterns fill spaces with hatching or herringbone marks and do not constitute real designs at all. The key-figure, scroll, terraced triangle, and other typical painted elements are absent.

The headquarters of the style seems to have been in the northern Rio Grande; incised sherds are found much more commonly at Abiquiu and Ojo Caliente than on the Pajarito; and in the south, according to the evidence of the Bandelier sherd collection, they do not occur at all.

Incising is typical of the decoration of most of the pottery of the Mississippi valley, particularly in the south,[1] but there the style is preponderatingly curvilinear and cross-hatching (not found in Rio Grande incised ware) is very abundant. Rio

[1] See the works of Holmes and C. B. Moore.

Grande incised pots are also typically southwestern in shape and therefore radically different from the vessels of the Mississippi valley. Although the Pajaritan group is the most easterly of all he southwestern styles and the stimulus which gave rise to incising may, perhaps, have come from that direction, I am nevertheless inclined to regard it as of local origin and development.

The rough cooking wares, both black and micaceous black, are only remarkable for the evidence that they give us of the degeneration of the corrugated technique. They are the last gasp, so to speak, of decorative coiling. Most examples are almost smooth, but in a few the coil may be made out as a faint ribbing of the surface and, very rarely, it is weakly indented with the finger tip, or a blunt instrument.

The above paper confines itself pretty strictly to a presentation of the ceramic evidence now available. The few deductions made are wholly tentative and are only put forward as a stimulus to further research. Much more work must be done in the "border regions" between the Rio Grande and the other southwestern culture areas; the Rio Grande country, too, should be searched for stratified sites.[1]

Some of the smaller "black-and-white" ruins must also be carefully excavated and their construction and contents compared with the construction and contents of ruins of the same types in other localities. Without much fuller data we cannot draw any reliable developmental or historical conclusions.

[1] *The American Museum Journal* (N. Y.) has just announced (Dec., 1914) the discovery by Mr N. C. Nelson of a deposit at the pueblo of San Cristóbal, New Mexico, which contained four distinct types of pottery. The deposit was so stratified that the relative ages of the types could be ascertained. What the wares were has not yet been announced but from the proximity of San Cristobal to the Pajarito plateau it can hardly be doubted that this most important discovery will throw real light upon the sequence of the types described in this paper.

PROVENANCE AND PRESENT OWNERSHIP OF PIECES FIGURED.

Abbreviations: P. M. Peabody Museum, Cambridge; N. M., New Mexico State Museum; S. W., Museum of the Southwest Society, Los Angeles, Cal.; Nat. Mus., National Museum, Washington. Sites: P., Puyé; Ty., Tyuonyi; Ot., Otowi; Tsch., Tschirege; Fri., Frijolito.

Plate XIV. 1, Ancho Cañon, P. M. 2, Ty. and P. N. M.

Plate XV. 1–6, Ancho Cañon, P. M. 7, Water Cañon Mesa, P. M. 8, Water Cañon, P. M. 9, Ancho Cañon, P. M. 10, Agua Fria, N. M. 11, Agua Fria, P. M. 12, Rowe, P. M. 13–17, Agua Fria, P. M. 18, near Puyé, N. M. 19, 20, Agua Fria, N. M.

Plate XVI. 1, P. N. M. 2, P. S. W. 3, Ty. N. M. 4, Locality unknown N. M. 5, Ojo Caliente (?), N. M. 6, Ot. Nat. Mus. 7, Ty. N. M. 8, Ty. P. M.

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Plate XVIII. Ideal figures except 16, Ty. N. M.

Plate XIX. 1, P. S. W. 2, Tsch. N. M. 3, Ty. P. M. 4, Tsch. N. M. 5, Ot. N. M. 6, Tsankawi, N. M. 7, P. N. M. 8, Tsch. N. M. 9, Ty. P. M. 10, Tsch. N. M. 11, 12, Ot. Nat. Mus.

Plate XX. 1, Tsch. N. M. 2, Ot. Nat. Mus. 3, P. S. W. 4, Tsch. N. M. 5, Tsch. N. M. 6, Unknown locality, N. M.

Plate XXI. 1, Yapashi, N. M. 2, 3, 4, 5, Ot. Nat. Mus.

Plate XXII. 1, Ty. P. M. 2, Ty. N. M. 3, Ty. N. M. 4, P. N. M. 5, P. N. M.

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Plate XXV. 1, P. S. W. 2, P. N. M. 3, Ty. N. M. 4, 5, P. N. M. 6, Ty. P. M. 7, 8, 9, 10, 11, P. N. M. 12, Ty. P. M.

Plate XXVI. 1, Ot. Nat. Mus. 2, Ty. P. M. 3, Ot. Nat. Mus. 4, P. N. M. 5, P. N. M. 6, P. S. W. 7, Ot. Nat. Mus. 8, P. S. W.

Plate XXVII. 1, Fri. N. M. 2, Fri. P. M. 3, 4, Fri. N. M. 5, Fri. P. M. 6, Ty. P. M. 7, Fri. P. M. 8, Ty. P. M. 9, Fri. N. M.

Plate XXVIII. All Fri. P. M.

Figure 12, a, Ot. Nat. Mus. b, P. N. M. *Figure 13*, a, Ot. N. M. b, Ojo Caliente, N. M. c, Ty. N. M. d, e, Ot. Nat. Mus. *Figure 14*, a, Ot. Nat. Mus. *Figure 15*, Ot. Nat. Mus. *Figure 16*, a–e, Ty. N. M. f, Tsch. N. M. g, Ojo Caliente, N. M. h–j, Ty. N. M. *Figure 17*, Ty. P. M. *Figure 18*, a, P. N. M. b, Ty. N. M. *Figure 19*, Ty. N. M. *Figure 20*, a, Tsch. N. M. b, c, Ty. P. M. *Figure 21*, All Agua Fria "Schoolhouse" P. M. *Figure 22*, Fri. N. M. *Figure 23*, Fri. P. M.

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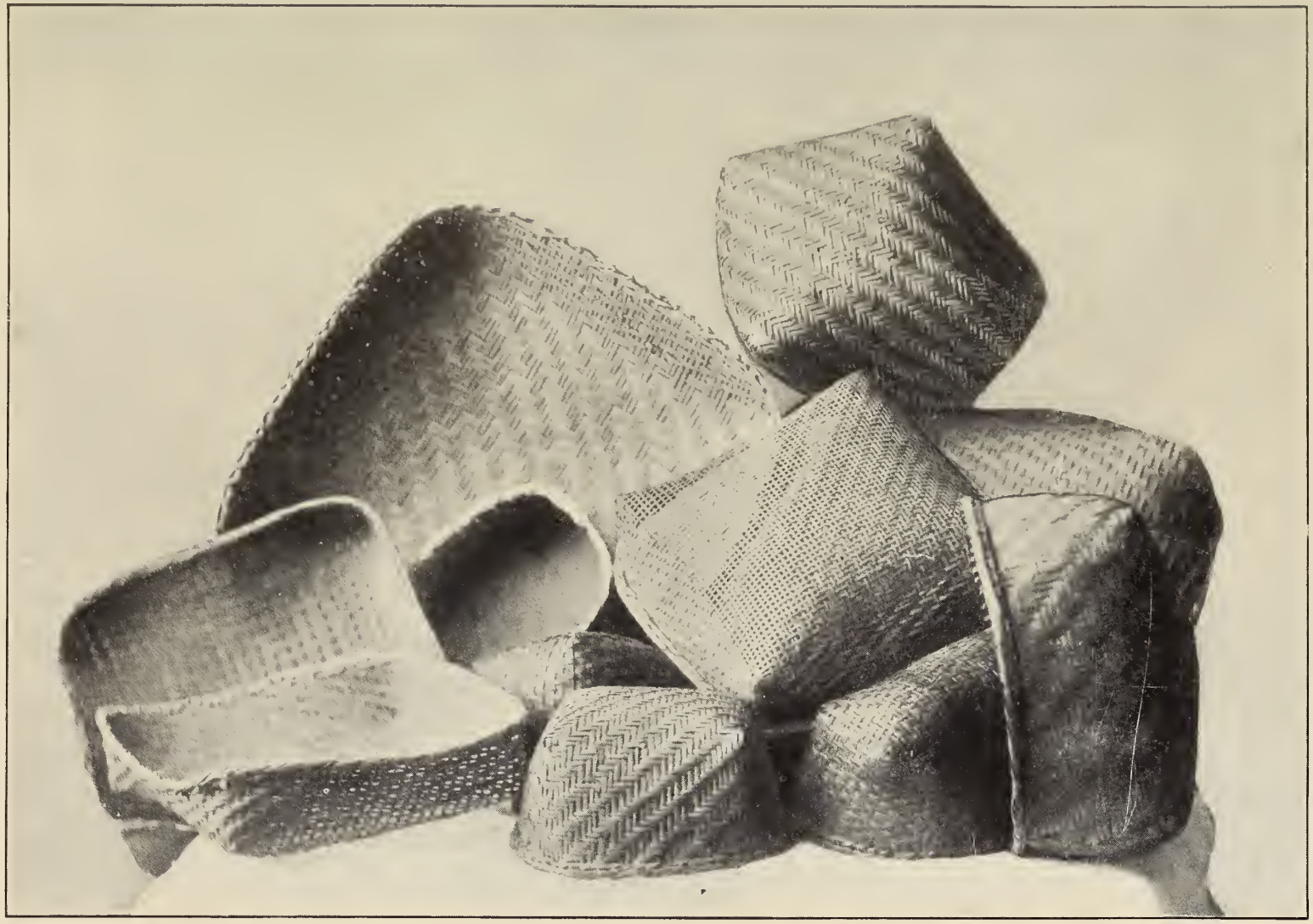
MAP SHOWING APPROXIMATE LOCATION OF CREEK TOWNS AND NEIGHBORING TRIBES

(COMPILED CHIEFLY FROM GATSCHET'S LIST)

MONTANA
CHEROKEE
NATION
OSAGE
NEW MEXICO
TEXAS
OKLAHOMA

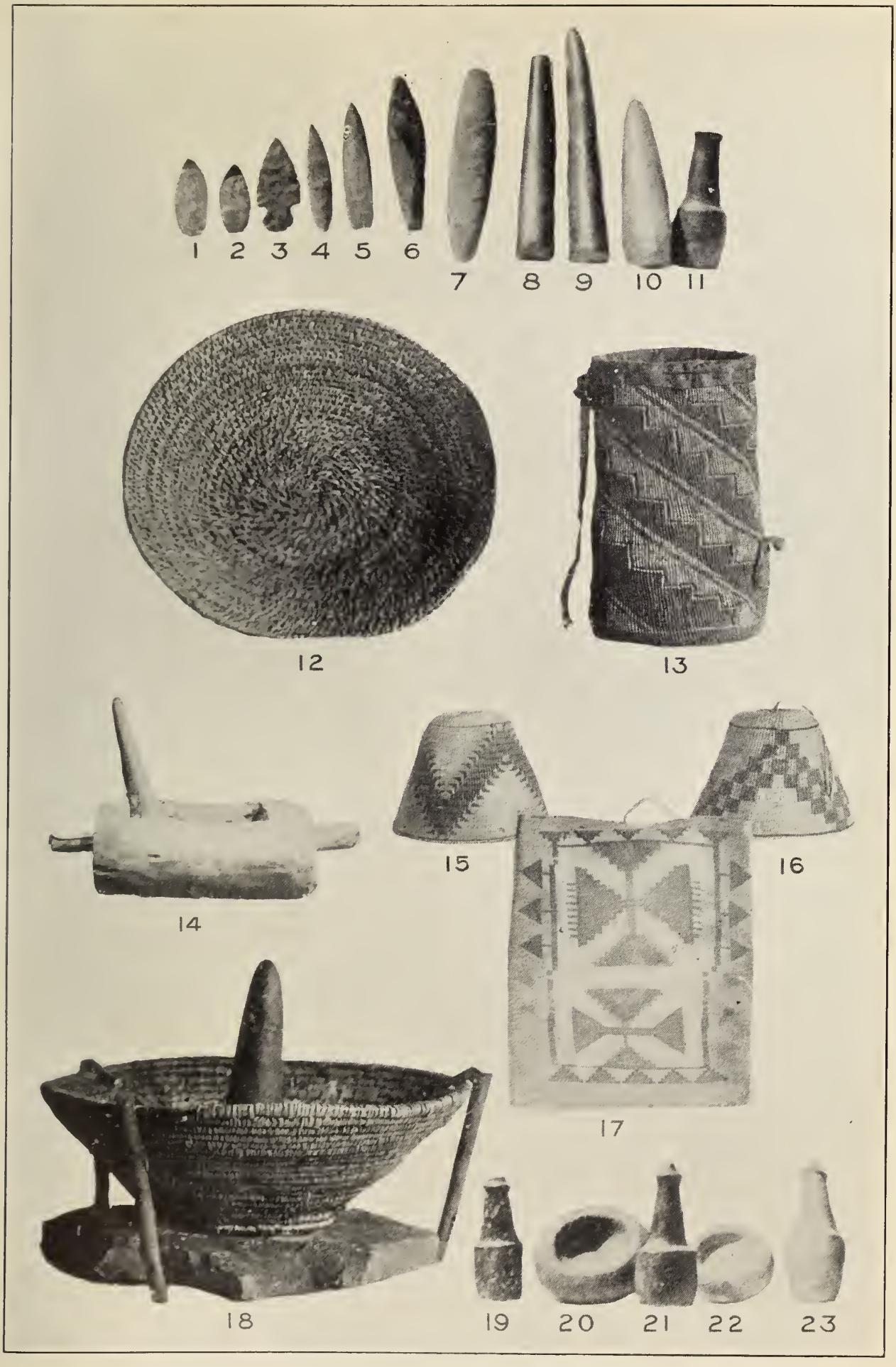
LASLIE CLOUD (KABITCIMA'ŁA, "RACCOON LEADER")

CREEK BOWS AND ARROWS BALL STICKS TURTLE-SHELL RATTLES, FEATHER FAN, ETC.
(From Report of the Indian Inspector for Indian Territory, 1901)



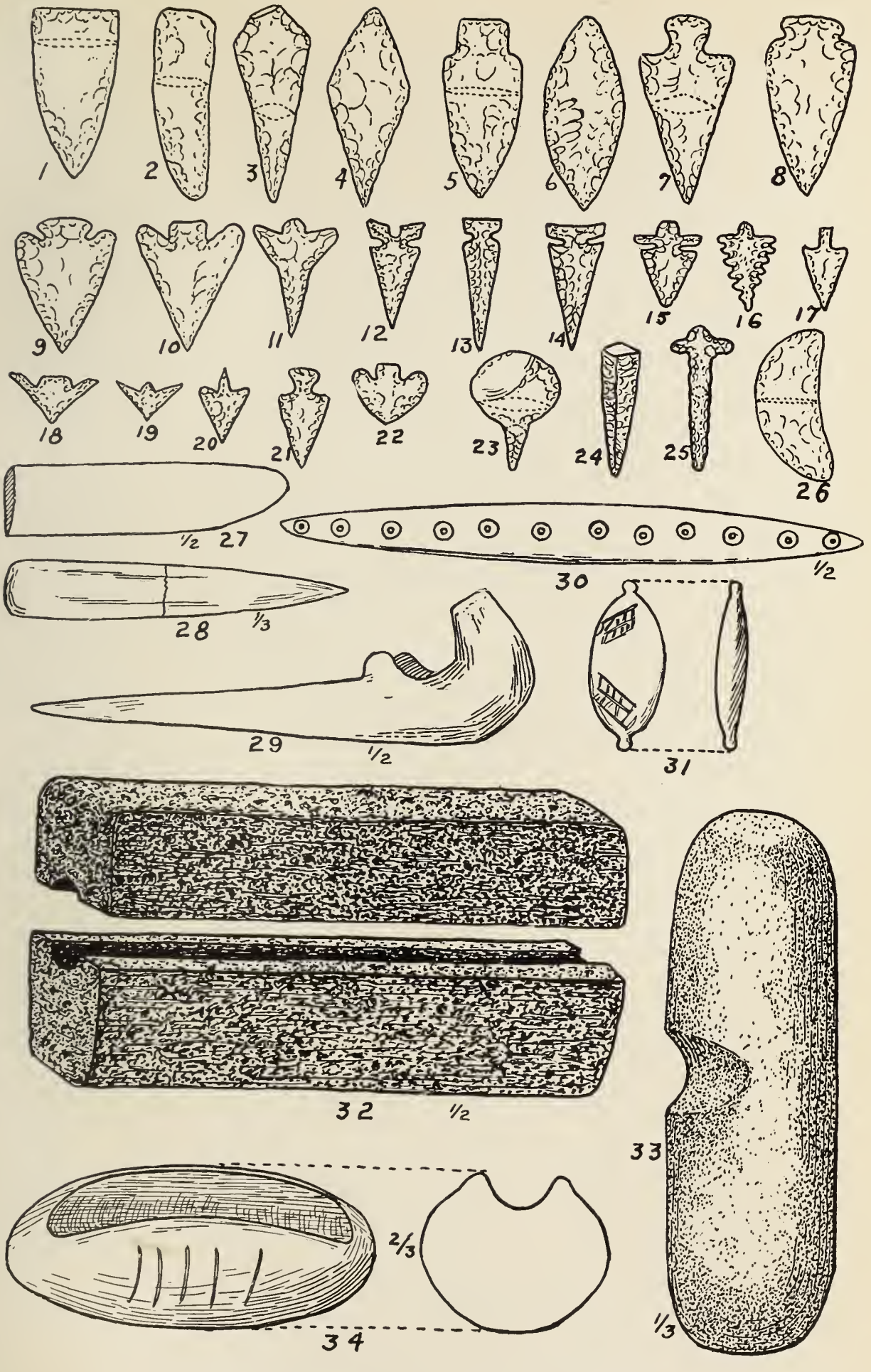
BASKETRY OF THE CREEKS
(From Report of the Indian Inspector for Indian Territory, 1901)

CREEK POTTERY AND WOODEN SPOONS
(From Report of the Indian Inspector for Indian Territory, 1901)



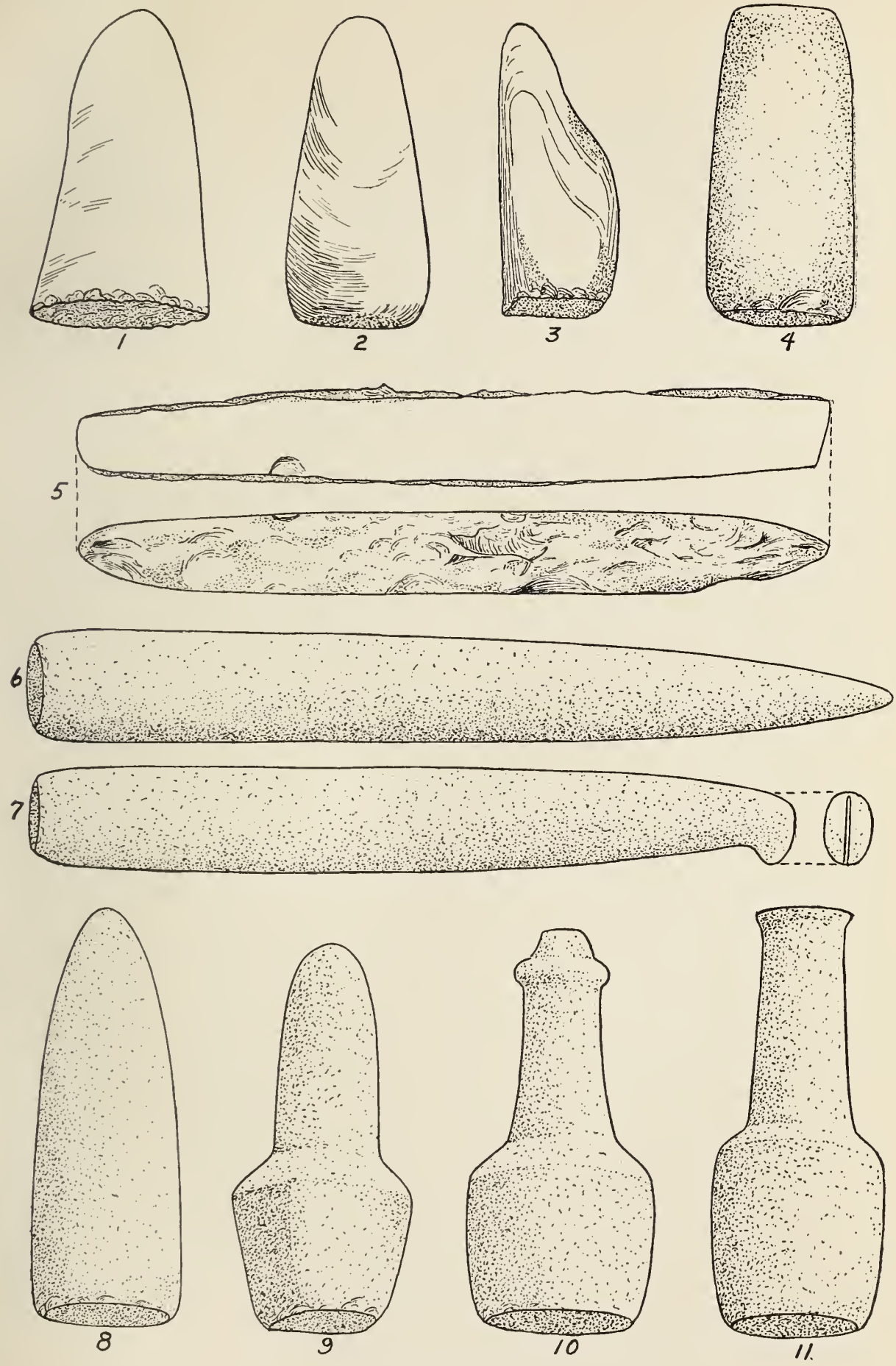
OBJECTS OF THE NEZ PERCES

1–7, Large Chipped Implements; 8–11, Pestles and Mauls; 12, Winnowing Basket; 13, Cylindrical Carrying Basket; 15–16, Basket Hats; 17, Flat Woven Wallet; 14, 18–23, Mortars, Pestles, and Mauls.



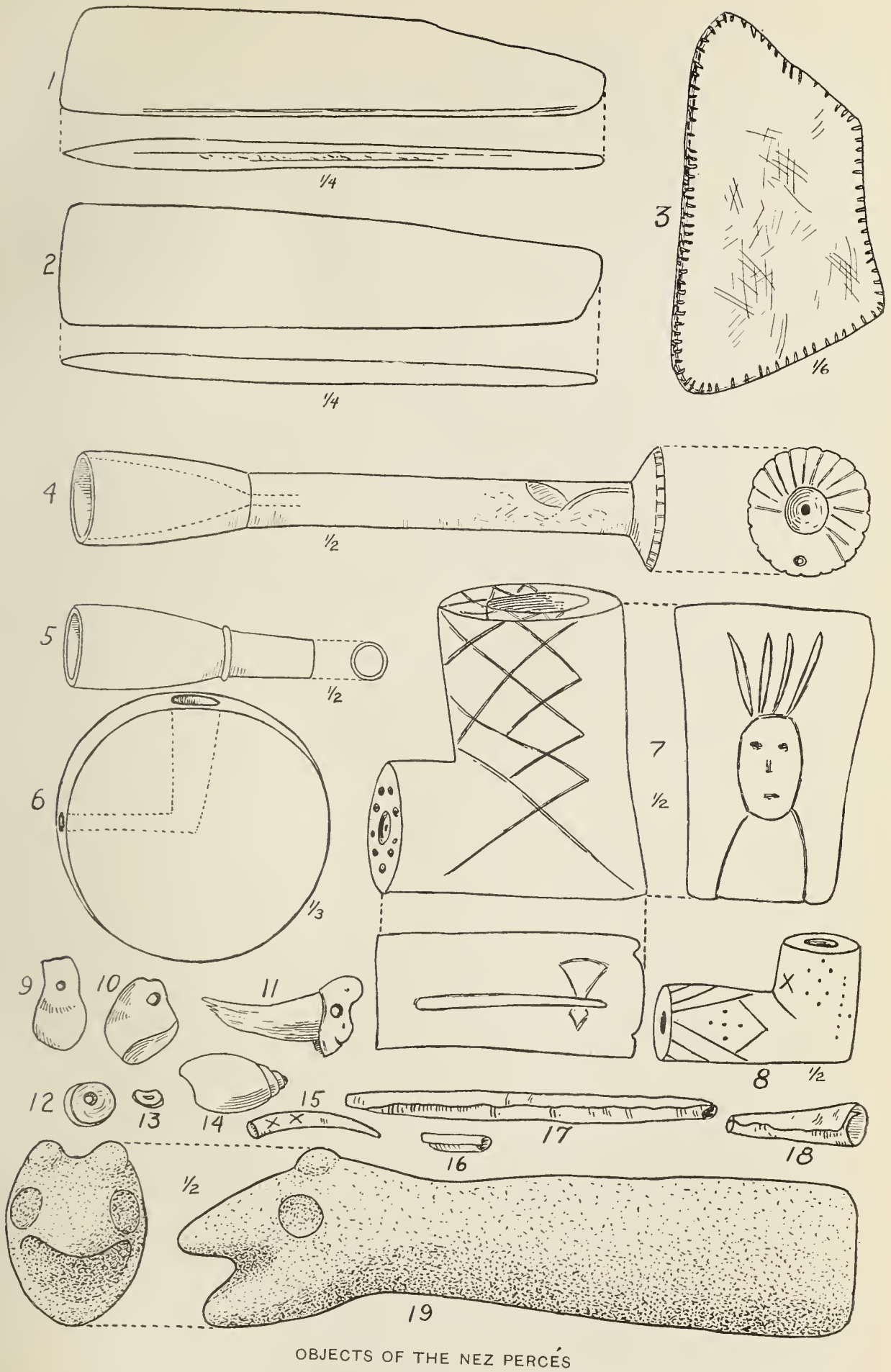
STONE AND BONE IMPLEMENTS OF THE NEZ PERCÉS

1–26, Chipped Stone Implements; 27–31, Bone Objects; 32, Arrowshaft Rasp; 33, Stone Handle for Digging-stick; 34, Polisher of Fine-grained Stone.



TYPES OF STONE PESTLES

1–5, Crude and Unfinished Pestles; 6–11, Finished Pestles. (All about one-fourth natural size.)



OBJECTS OF THE NEZ PERCÉS

1–2, Jadeite Wedges; 3, Notched Stone; 4–8, Pipes; 9–18 Beads; 19, Sculptured Stone.

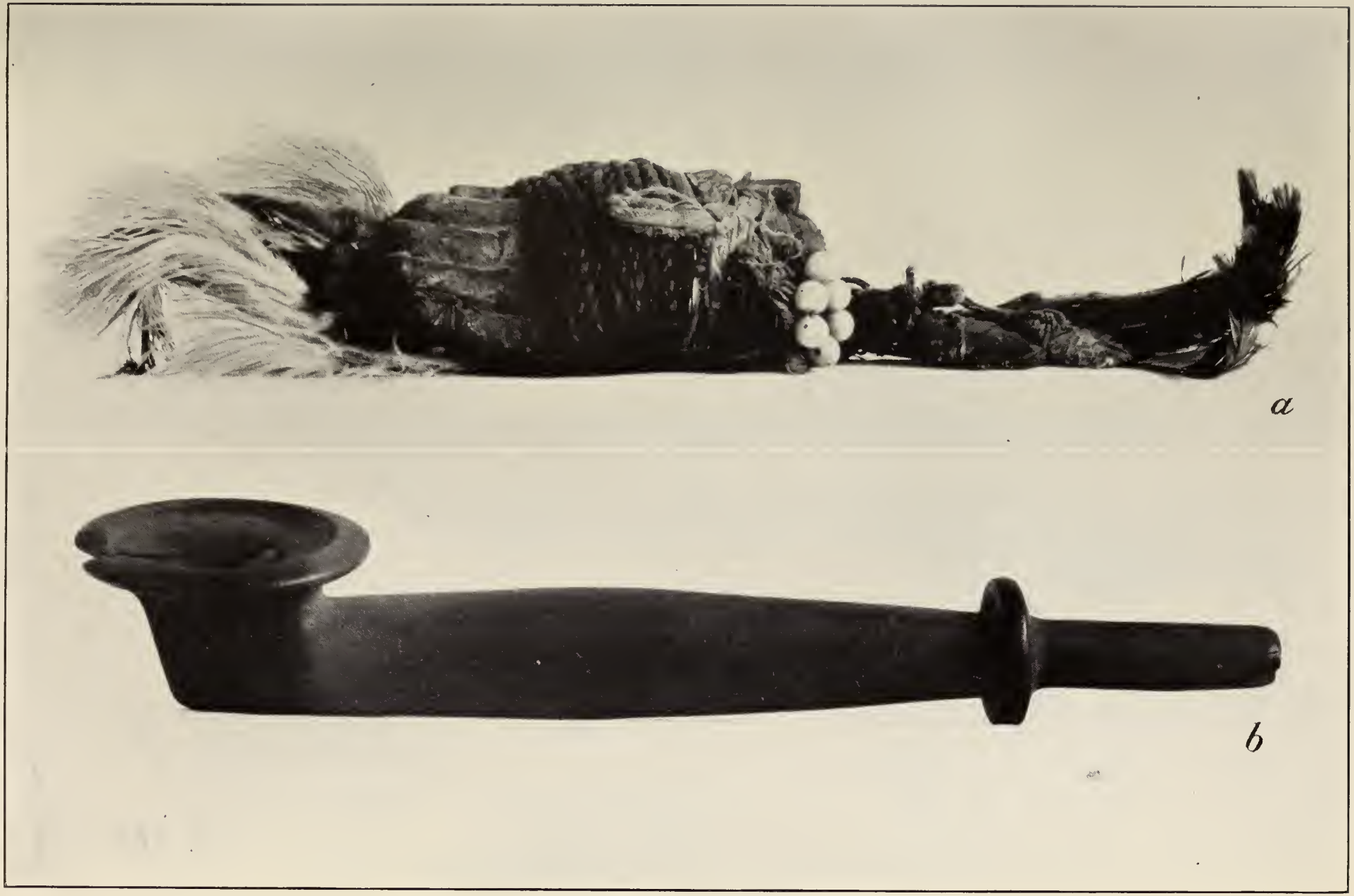
THE NEZ PERCÉ INDIANS

1–2, Types of Nez Percé Indians; 3, Framework of Temporary Sweathouse; 4, 5, Petroglyphs on Buffalo Rock; 6, Mat Lodge; 7, Canoe.

AN HIDATSA EARTH LODGE

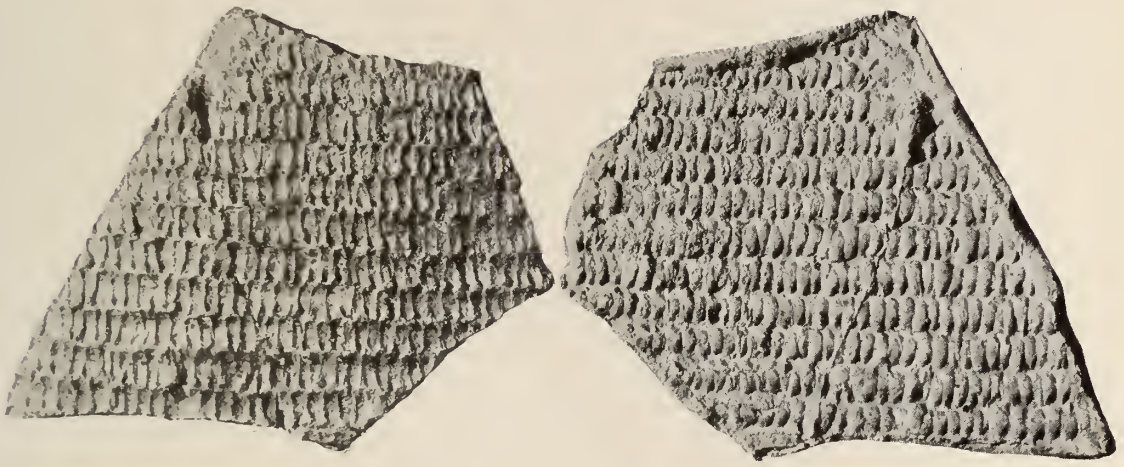
SHRINE IN POSITION IN EARTH LODGE

THE SHRINE, AND THE SKULL-BUNDLE CLOSED AND OPEN

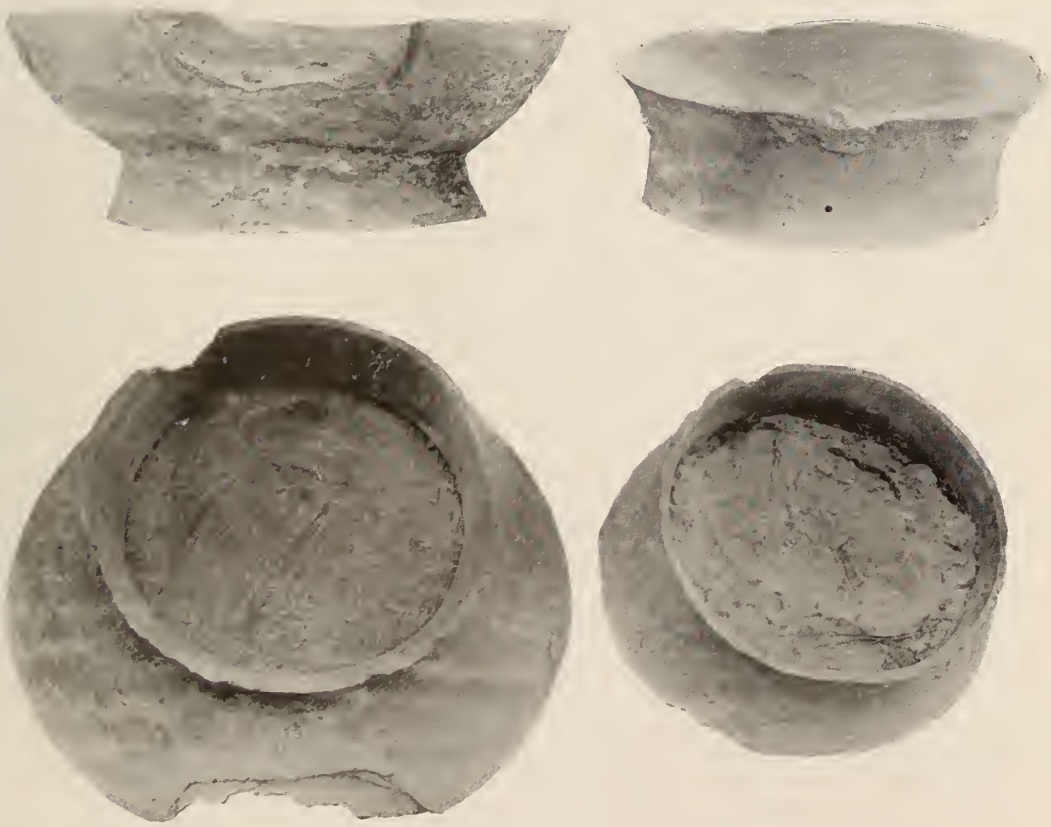


HIDATSA SHRINE OBJECTS

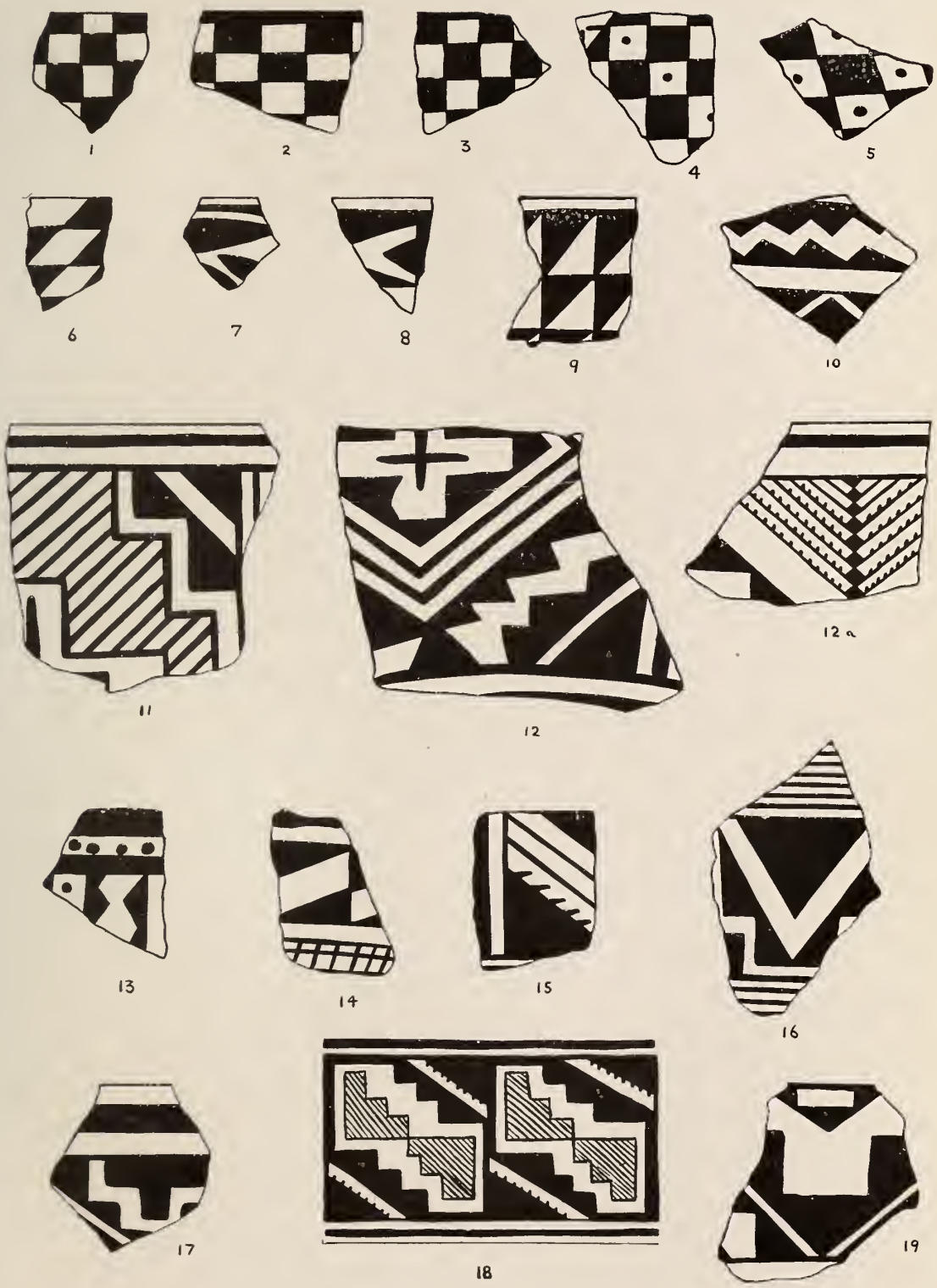
a, Dried Bear-paw Medicine from the Medicine-bag. *b*, Medicine-pipe from the Skull-bundle



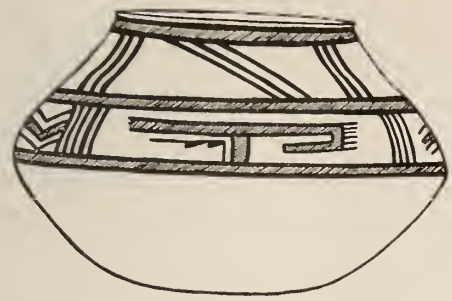
SHERDS SHOWING CASTS OF BASKET MARKINGS



BROKEN OLLAS FILLED WITH TUFA, PROBABLY USED AS MOLDS



SMALL RUINS — BLACK AND WHITE DESIGNS



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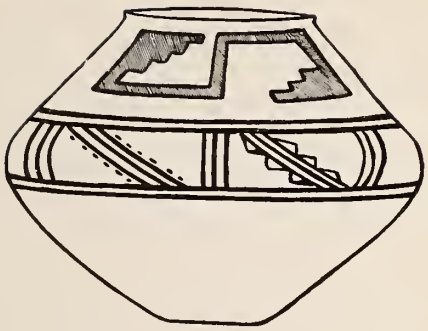

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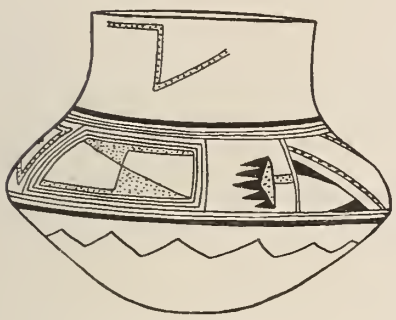

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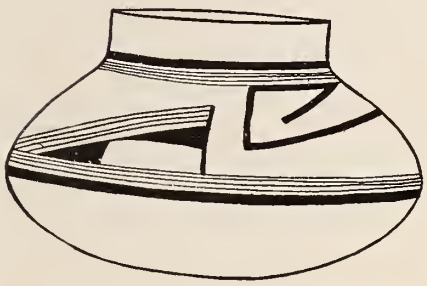

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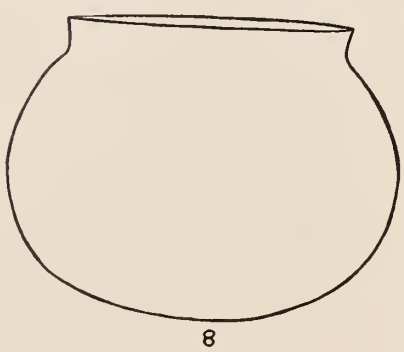

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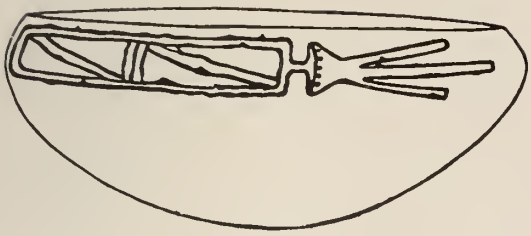
"PAJARITAN" WARES — OLLA SHAPES



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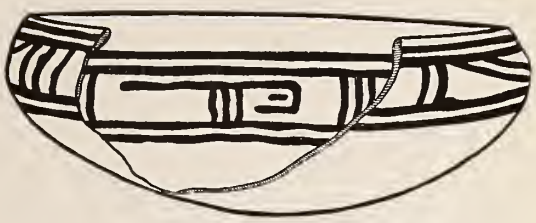

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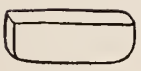

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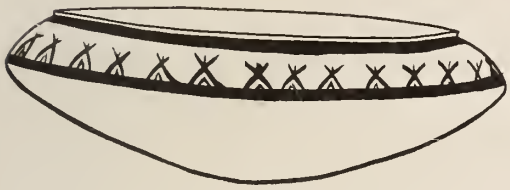

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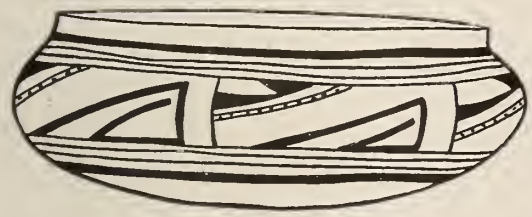

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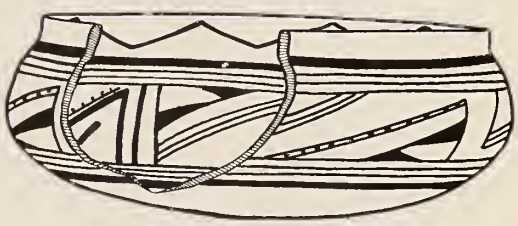

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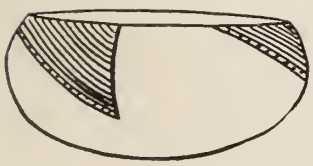

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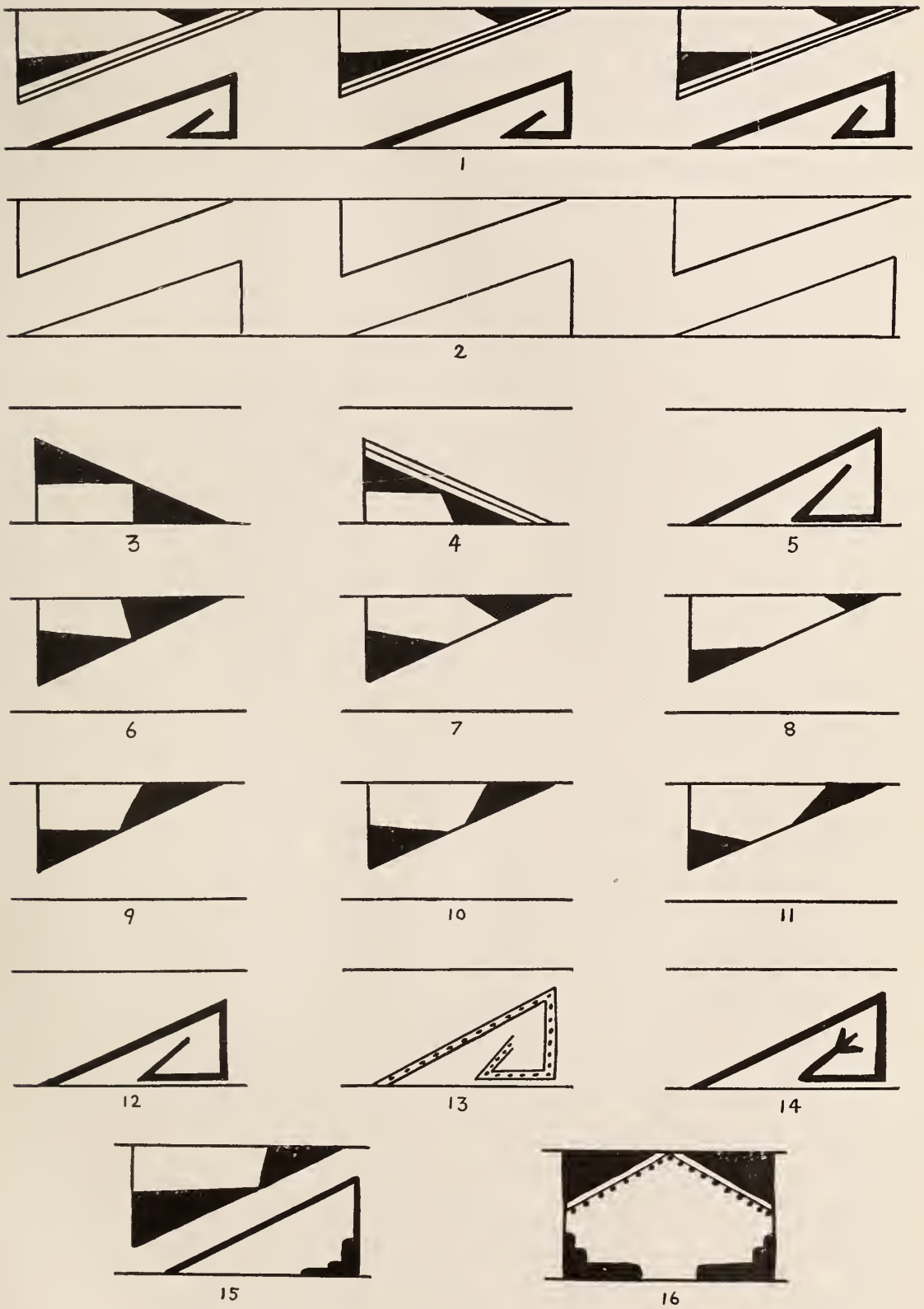
"PAJARITAN" WARES — BOWL SHAPES



BISCUITWARE—ANALYSIS OF "STANDARD" DESIGN

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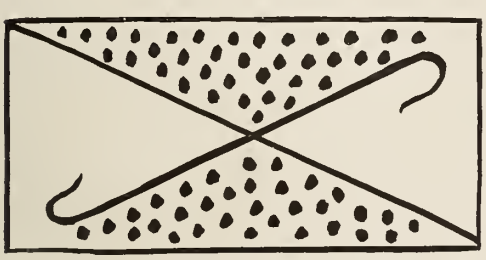
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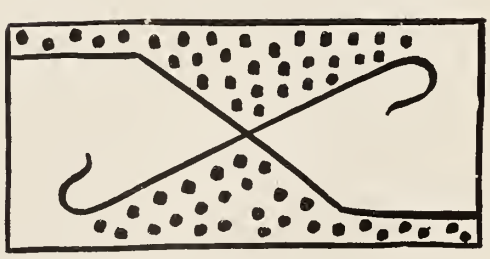
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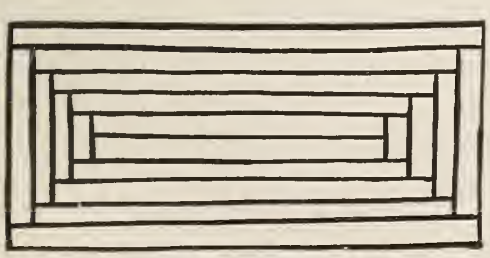
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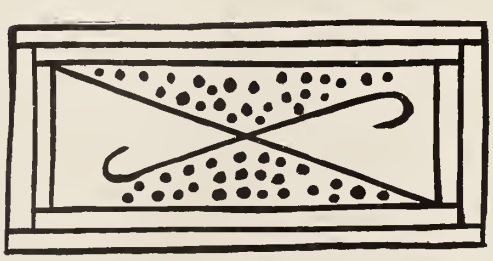
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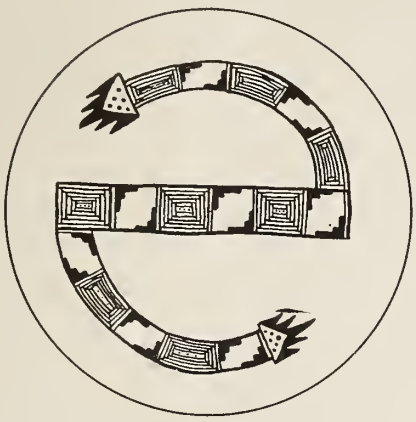
BISCUITWARE DECORATIONS



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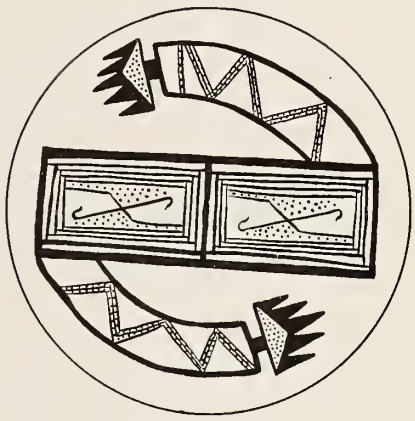

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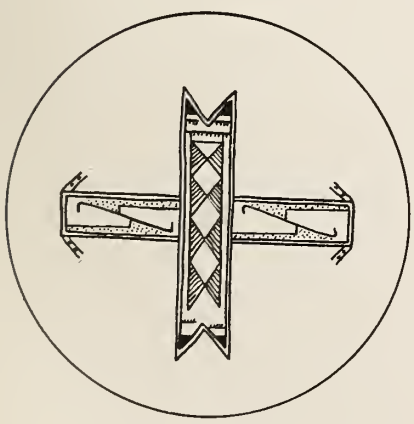

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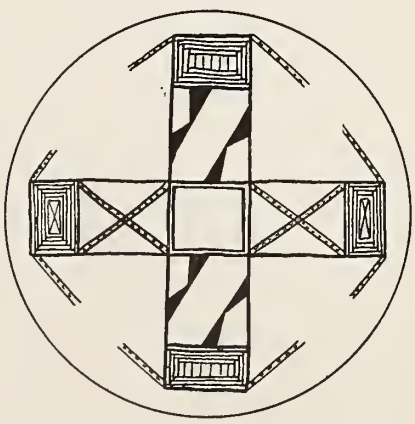

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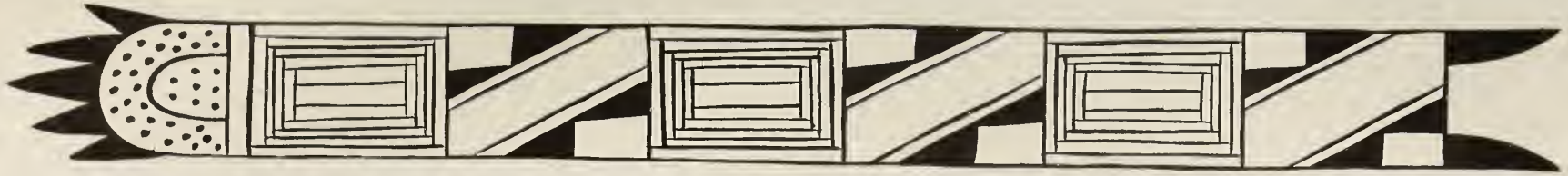
BISCUITWARE — WHIRLING AWANYUS AND CROSS FIGURES



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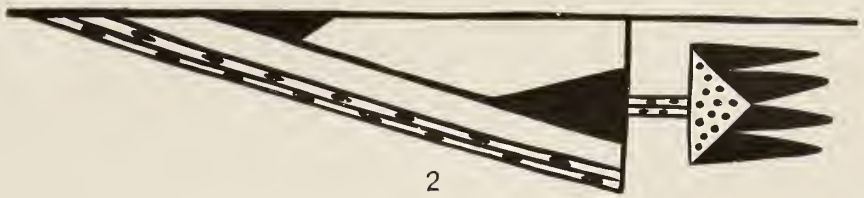

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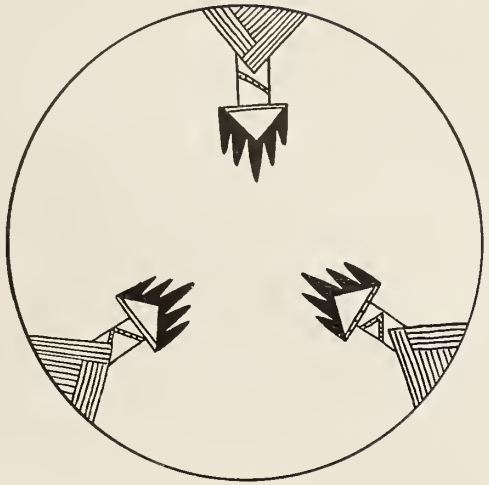

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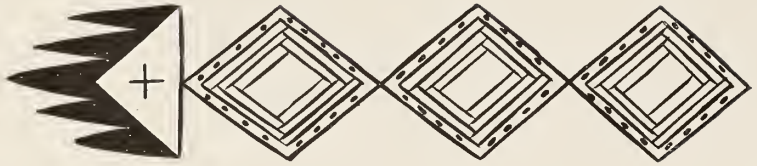

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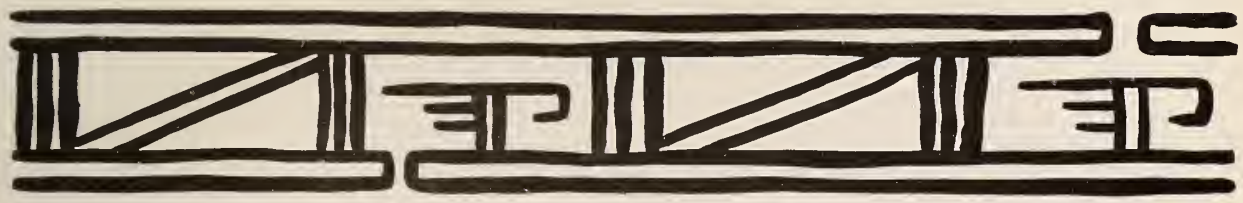
BISCUITWARE — BAND AWANYUS



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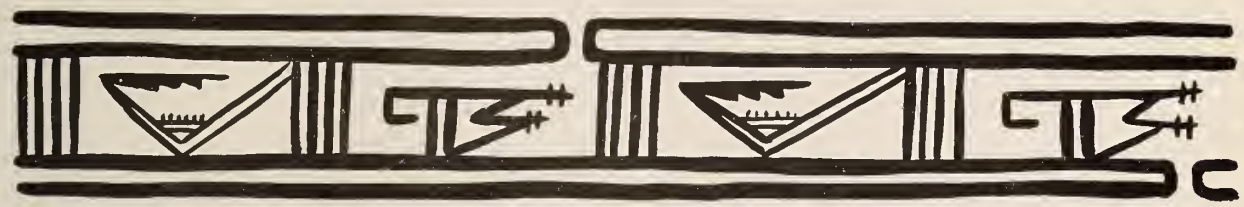

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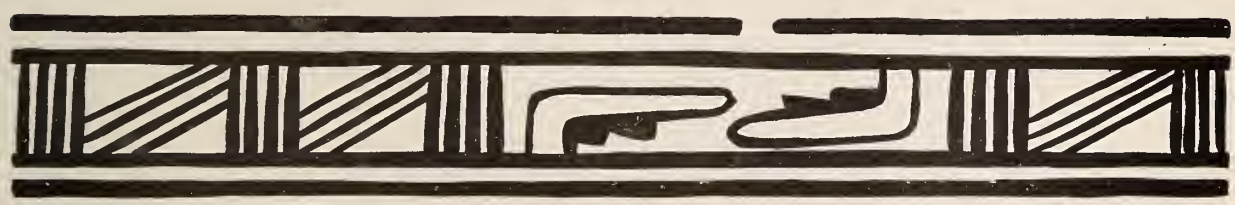

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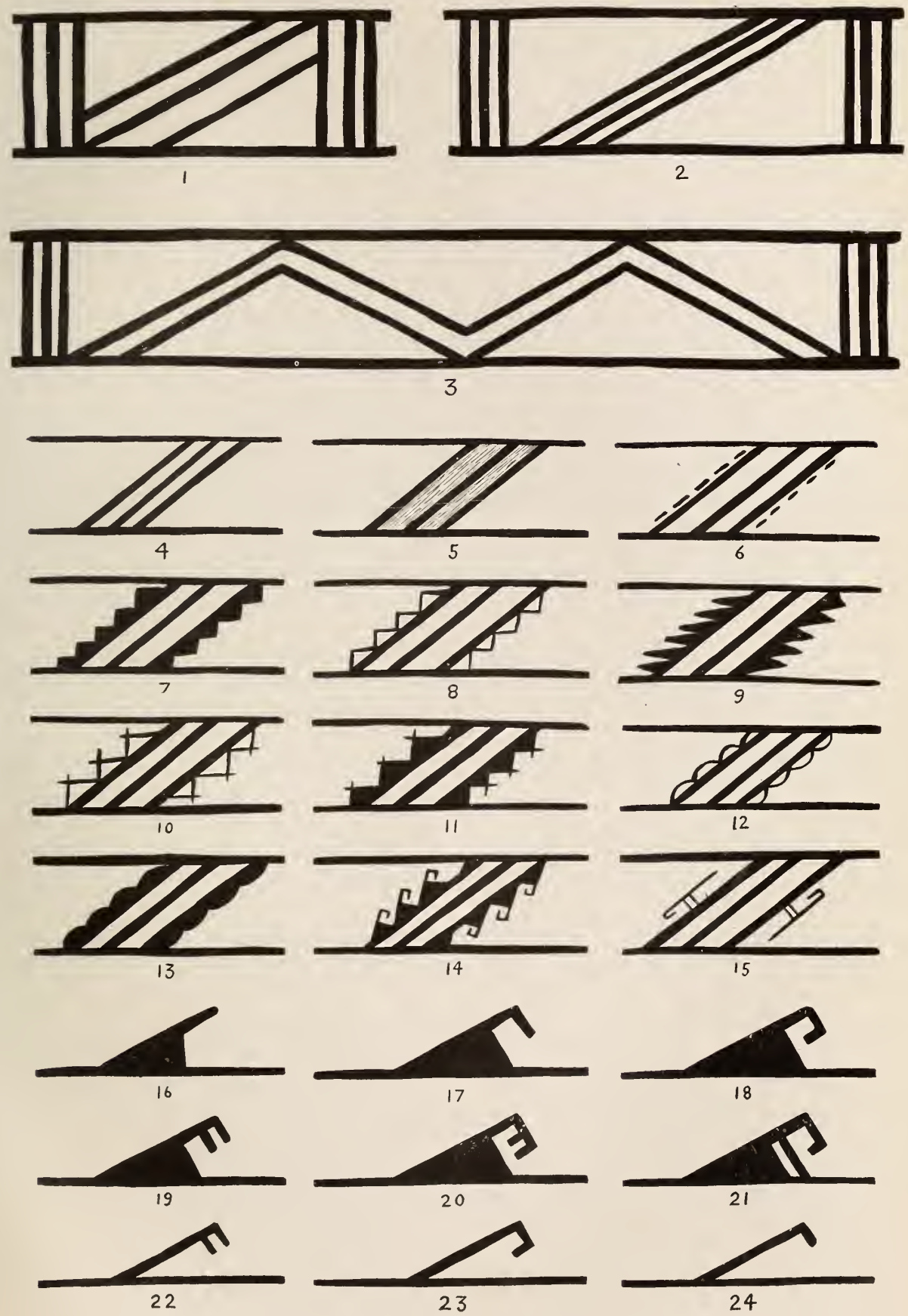
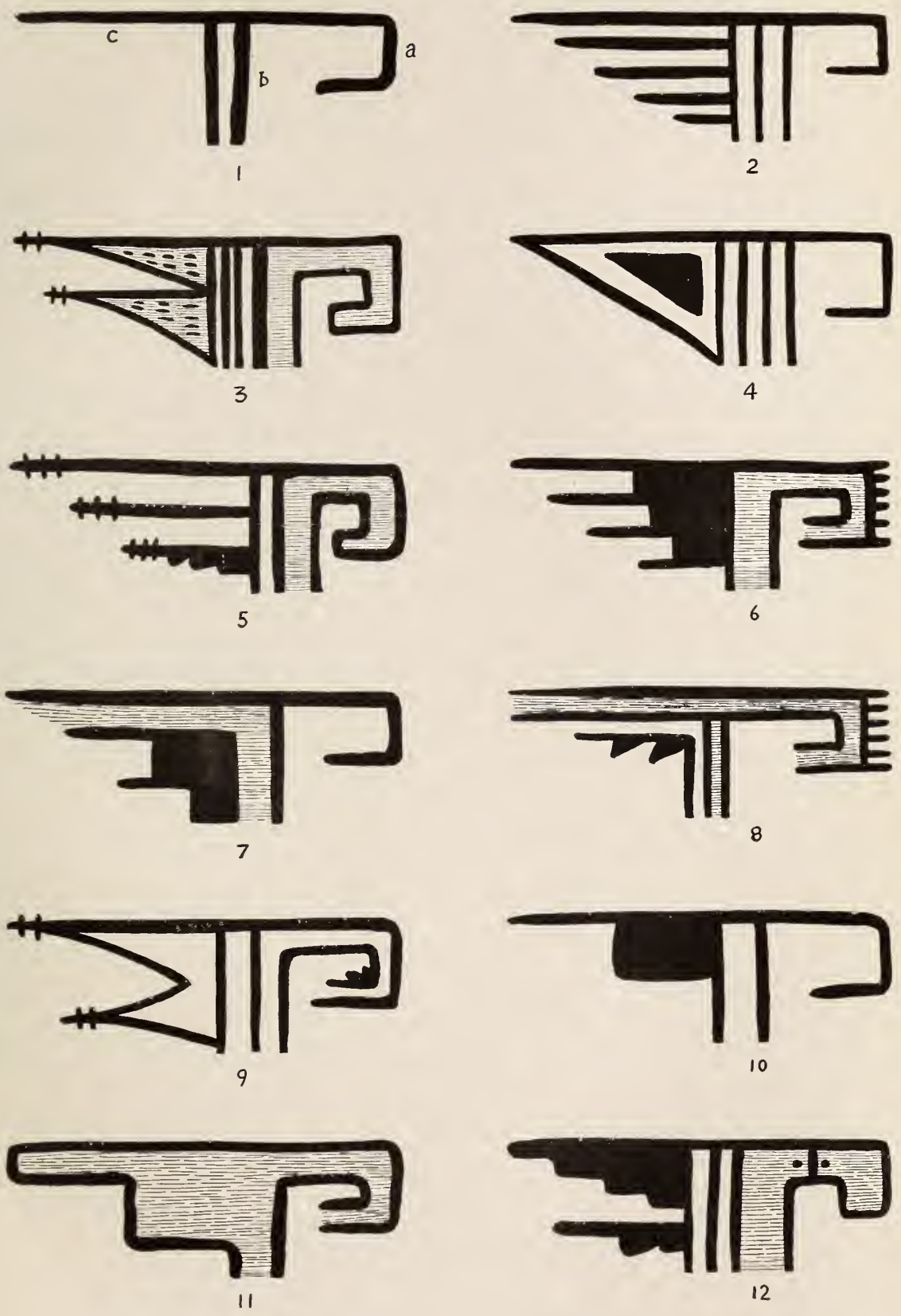
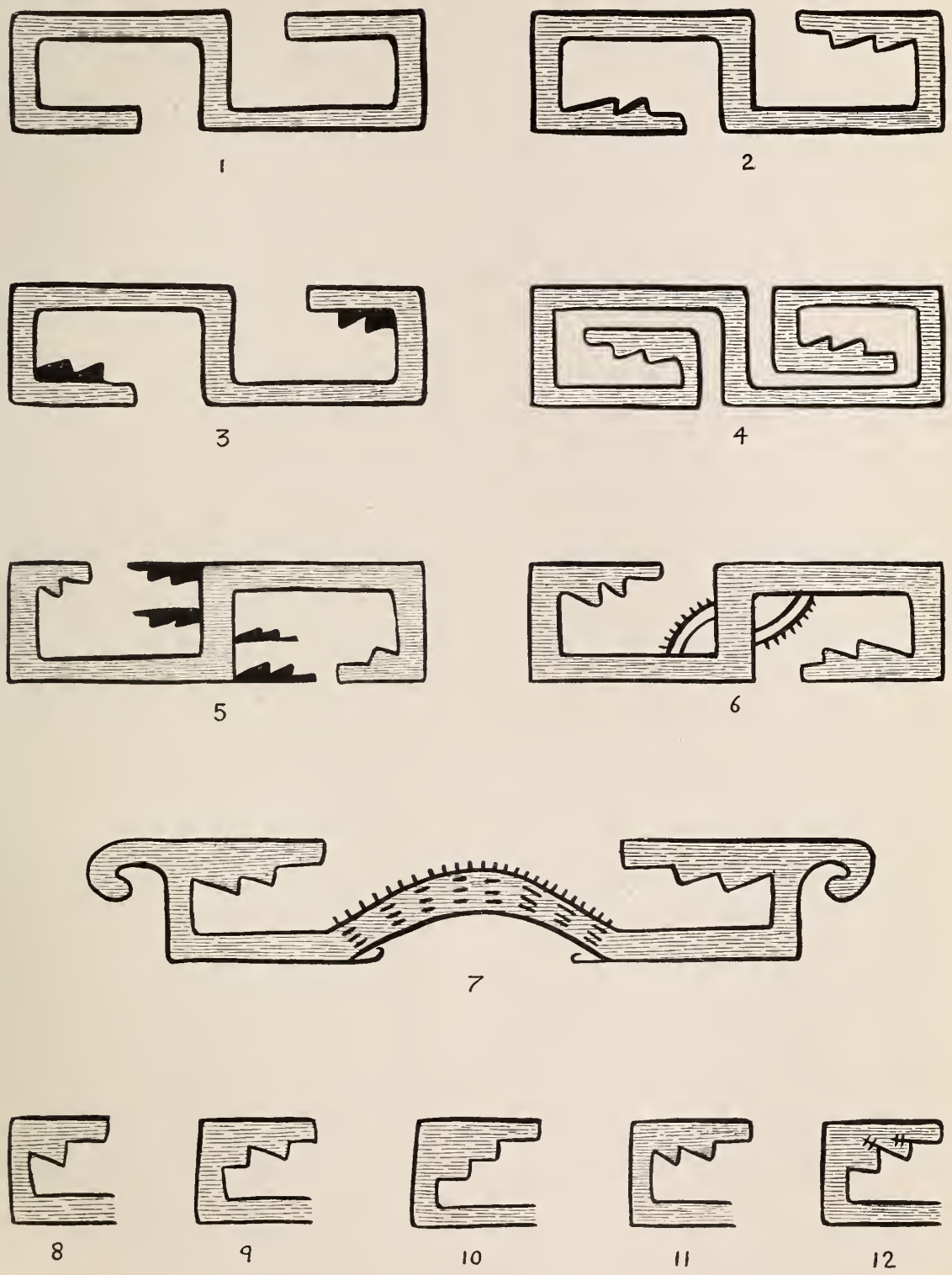
REDWARE — BAND DESIGNS



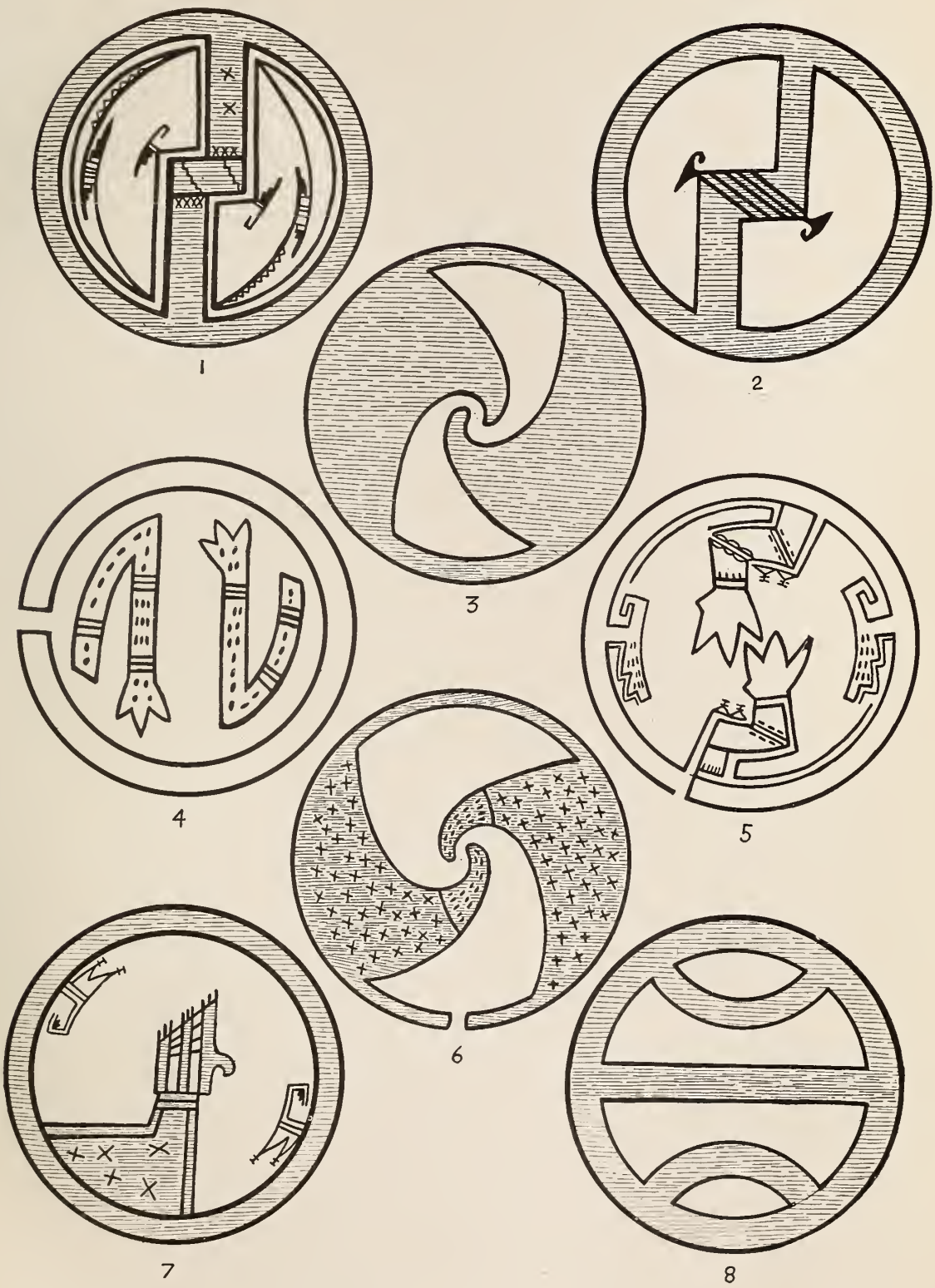
REDWARE — OBLIQUE PANEL DESIGN



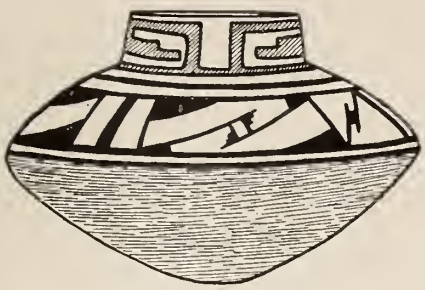
REDWARE — THE BIRD FIGURE



REDWARE—THE DOUBLE KEY FIGURE



REDWARE—ALLOVER DESIGNS



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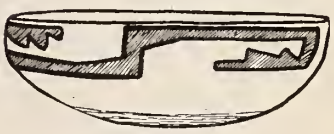

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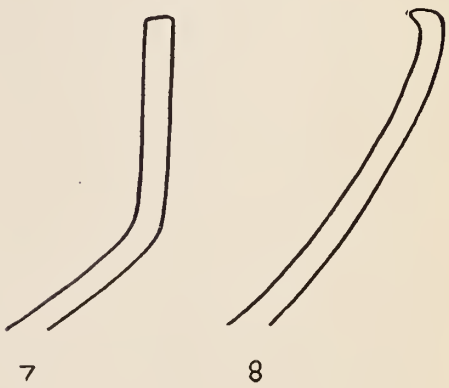

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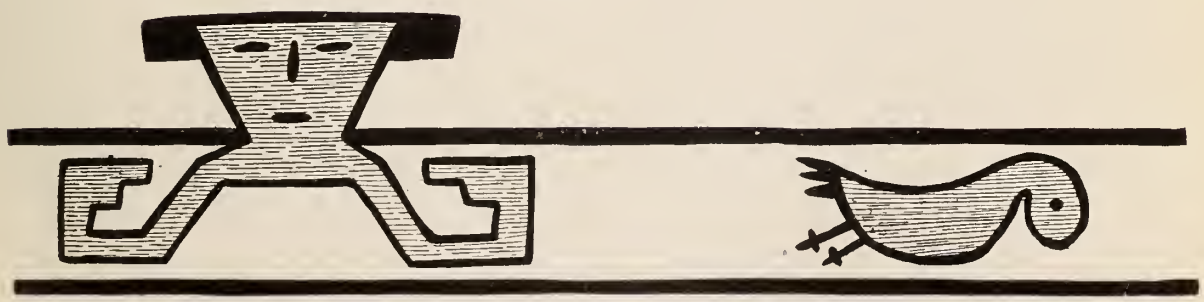

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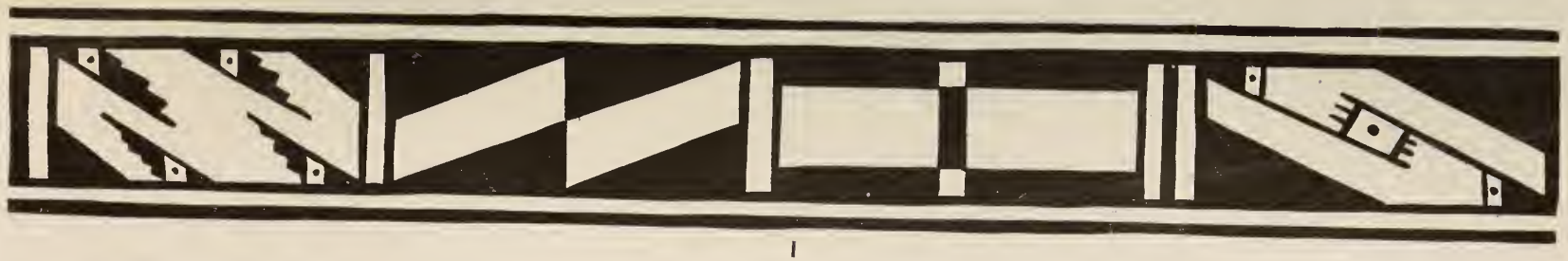
FRIJOLITO REDWARE — SHAPES AND DESIGNS



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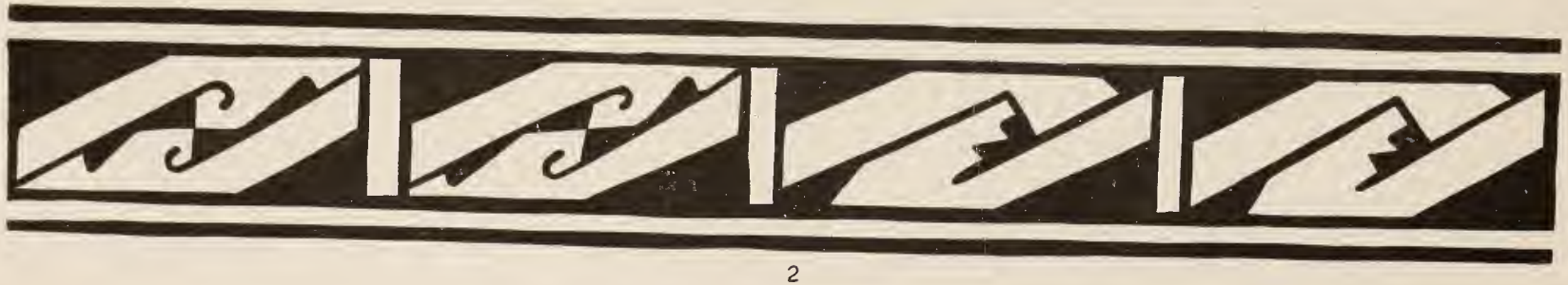

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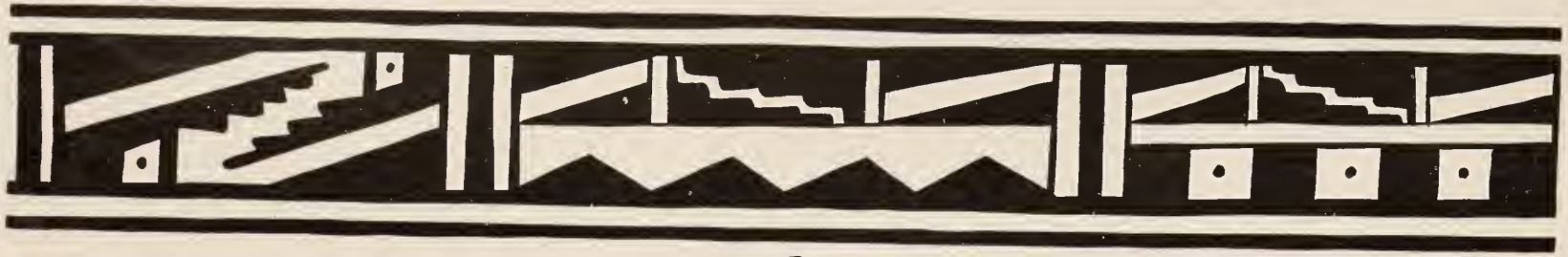

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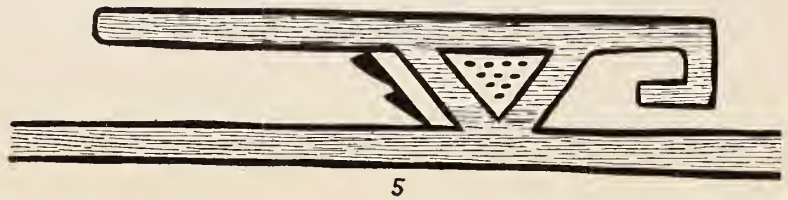

5

FRIJOLITO REDWARE DESIGNS

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